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In the Supreme Court of the United States

OCTOBER TERM, 1977

77-375

**UNITED STATES NUCLEAR REGULATORY COMMISSION,
ET AL., APPELLANTS**

v.

**CAROLINA ENVIRONMENTAL STUDY GROUP, INC.,
ET AL., APPELLEES**

**ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF NORTH CAROLINA**

JURISDICTIONAL STATEMENT

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OPINION BELOW

The memorandum opinion of the district court (App. A, *infra*, pp. 1a-61a) is reported at 431 F. Supp. 203.

JURISDICTION

The judgment of the district court declaring unconstitutional 42 U.S.C. 2210(e) was entered on

April 14, 1977 (App. B, *infra*, pp. 62a-63a). A notice of appeal to this Court was filed on May 13, 1977 (App. C, *infra*, p. 64a). On July 6, 1977, the Chief Justice extended the time for docketing the appeal to and including September 10, 1977. Jurisdiction is conferred on this Court by 28 U.S.C. 1252. See *Weinberger v. Salfi*, 422 U.S. 749, 763 n. 8.

QUESTION PRESENTED

Whether the statutory limitation on liability arising from a single nuclear incident is constitutional.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

The Fifth Amendment to the Constitution provides in pertinent part:

No person shall be * * * deprived of life, liberty, or property, without due process of law * * *.

42 U.S.C. (Supp. V) 2210(e), provides in pertinent part:

The aggregate liability for a single nuclear incident of persons indemnified, including the reasonable costs of investigating and settling claims and defending suits for damage, shall not exceed (1) the sum of \$500,000,000 together with the amount of financial protection required of the licensee or contractor or (2) if the amount of financial protection required of the licensee exceeds \$60,000,000, such aggregate liability shall not exceed the sum of \$560,000,000 or the amount of financial protection required of the licensee,

whichever amount is greater: *Provided*, That in the event of a nuclear incident involving damages in excess of that amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude * * *.

STATEMENT

1. Under the Price-Anderson Act, 71 Stat. 576, as amended, 42 U.S.C. (and Supp. V) 2210, each operator of a large nuclear power plant licensed by the Nuclear Regulatory Commission¹ must maintain an amount of financial protection against public liability claims equal to the maximum amount of liability insurance available at reasonable cost and on reasonable terms from private sources (the "primary insurance amount") 42 U.S.C. (Supp. V) 2210(b).² Each licensee also must participate in a secondary insurance plan, under which a deferred premium of not more than \$5 million for each nuclear reactor would become payable following a major nuclear accident (the "secondary insurance amount"). *Ibid.* See also 42

¹ The Nuclear Regulatory Commission succeeded to the licensing and related regulatory functions of the Atomic Energy Commission in accordance with the Energy Reorganization Act of 1974, 88 Stat. 1233, 42 U.S.C. (Supp. V) 5801 *et seq.*

² The Commission has determined that the primary insurance amount, which was \$60 million when Price-Anderson was originally enacted, is now \$140 million. 42 Fed. Reg. 20189.

Fed. Reg. 49. In addition, the Commission is directed to enter into contracts to indemnify each licensee from public liability arising from nuclear incidents in excess of the licensee's primary and secondary insurance amounts, but indemnification is limited to \$500 million for each nuclear incident. 42 U.S.C. (Supp. V) 2210 (c).³ Both the primary and secondary insurance and the government's indemnity agreements cover not only licensees but also any other person who may be liable. 10 C.F.R. 140.91, Section II; 10 C.F.R. 140.92, Art. I, Paragraph 6.

The Act limits the aggregate liability for a single nuclear incident to \$560 million or the amount of primary and secondary insurance required of the licensee, whichever is greater. 42 U.S.C. (Supp. V) 2210(e).⁴ The Act further provides, however, "[t]hat in the event of a nuclear incident involving damages in excess of that amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude." *Ibid.*

³ Similar indemnity arrangements are made with respect to contractors with the Energy Research and Development Administration who are engaged in activities involving a risk of a substantial nuclear incident. 42 U.S.C. (Supp. V) 2210(d).

⁴ The Commission estimated that by 1980 the primary and secondary insurance required of a licensee operating a major nuclear reactor will exceed \$560 million, and that by 1985 it will exceed \$1 billion. See S. Rep. No. 94-454, 94th Cong., 1st Sess. 36 (1975).

Pursuant to 42 U.S.C. (Supp. V) 2210(a), the Commission requires that the insurance policies and indemnity agreements provide that after any accident with substantial offsite damage, the licensees and other persons responsible will waive any defense as to conduct or fault, including negligence and contributory negligence, any defense of governmental or charitable immunity, and any defense based on a statute of limitation if suit is instituted within three years from the date the claimant should have known of his injury and not more than twenty years from the date of the incident. 10 C.F.R. 140.81-140.85, 140.91, 140.92.

The Act authorizes the Commission to enter into agreements with other indemnitors to establish procedures for the prompt settlement of claims. 42 U.S.C. 2210(m). It also allows the Commission to make immediate assistance payments following a nuclear incident. *Ibid.* Upon petition of the Commission or other interested party, the federal district court having jurisdiction over the situs of a nuclear incident must determine whether the damages from the incident may exceed the limits of liability. 42 U.S.C. (and Supp. V) 2210 (o). If damages may exceed the limits of liability total payments may not exceed 15 percent of that amount unless made pursuant to a plan of distribution, including provision for possible latent injury claims, that has been approved by the court. *Ibid.*

2. Appellees filed this action in the United States District Court for the Western District of North

Carolina, challenging an order of the Atomic Energy Commission⁵ that granted Duke Power Company permission to build two nuclear power plants for the generation of electricity near Charlotte, North Carolina. The Atomic Energy Commission moved to dismiss on the ground that under 28 U.S.C. 2342(4) the courts of appeals had exclusive jurisdiction to review its orders. The district court stayed action on the case pending decision on a suit for review filed by appellees in the United States Court of Appeals for the District of Columbia Circuit. After the latter court upheld the Commission's order (*Carolina Environmental Study Group v. United States*, 510 F. 2d 796), the district court concluded that it still had jurisdiction to consider appellees' contention that the statutory limitation on liability was unconstitutional. The court conducted an evidentiary hearing on the questions whether appellees had standing to challenge the Act and whether the issue was ripe for adjudication. The court sustained appellees' standing, determined that the issue was not premature, and held that the limitation on liability violates the Due Process Clause of the Fifth Amendment.

The court reasoned that the construction and operation of the power plants would have immediate adverse consequences for appellees, including exposure to a small amount of radiation, the heating of nearby recreational lakes, and the engendering of present fear of a future major accident in one of the plants; that the operation of the plants also posed

⁵ See note 1, *supra*.

the risk of future adverse consequences, in the form of personal injury or property loss arising from a nuclear incident; that the construction and operation of the plants would not have been undertaken in the absence of a statutory limitation on liability; and therefore that appellees had standing to challenge that statutory limitation and their challenge was ripe for adjudication.

On the merits, the district court held that the limitation on liability violates the due process and equal protection principles of the Fifth Amendment. With respect to due process, the court concluded that the limitation on liability deprives victims of nuclear incidents of any reasonable certainty of full compensation, without any *quid pro quo*, such as waiver of defenses or prompt release of funds. With respect to equal protection, the court reasoned that the Act irrationally places the risk of a major nuclear incident upon people who live near nuclear power plants, that it irrationally places a greater burden upon people injured by a nuclear incident than it placed upon people injured by other types of accidents, and that the limitation on liability serves no legitimate public purpose. The district court declared unconstitutional 42 U.S.C. 2210(e) "and any other provision necessary to implement the \$560-million limitation of liability therein" (App. B, *infra*, p. 63a).⁶

⁶ Duke Power Company filed a separate jurisdictional statement seeking review of this judgment on August 15, 1977 (No. 77-262).

THE QUESTION IS SUBSTANTIAL

The district court has declared unconstitutional a central feature of a significant Act of Congress. By holding that the statutory limitation on liability arising from a nuclear incident is invalid, the court has confronted the operators of nuclear power plants and those who supply equipment for use in such plants with the threat of enormous unindemnified liability, a threat that might act as a substantial deterrent to private participation in the development of nuclear energy.⁷ The issue is of obvious importance and warrants plenary review by this Court.⁸

1. Private development of nuclear energy was first authorized by Congress in the Atomic Energy Act of

⁷ The statutory limitation on liability also covers contractors with the Energy Research and Development Administration. See 42 U.S.C. (Supp. V) 2210(d) and 5817. Accordingly, the decision below also may discourage private participation in such atomic energy activities as basic research and weapons development and production.

⁸ Appellant in No. 77-262, Duke Power Company, has presented the questions whether the appellees had standing and whether their claims are ripe for review. In view of the importance of the limitation of liability issue, we believe the merits of that issue should be reached if it is constitutionally permissible to do so. Given the district court's finding that the nuclear power plants here in question are not likely to be completed or operated without the protection afforded by the Price-Anderson Act's limitation of liability provision, a finding that we do not contend is clearly erroneous, appellees and their claims appear to satisfy the minimum jurisdictional requirements of Article III of the Constitution. See *Arlington Heights v. Metropolitan Housing Corp.*, 429 U.S. 252, 263-264; *Pierce v. Society of Sisters*, 268 U.S. 510, 536.

1954, 68 Stat. 921, 42 U.S.C. 2011 *et seq.* It soon became apparent, however, that the very substantial private investment necessary for the construction of nuclear power facilities might not be forthcoming unless investors could be afforded protection, not available through private insurers, against tort liability arising from major accidents. See "AEC Staff Study of the Price-Anderson Act," Selected Materials on Atomic Energy Indemnity and Insurance Legislation, Joint Committee on Atomic Energy, 93d Cong., 2d Sess. 1-2 (1974). See also App. A, *infra*, pp. 30a-40a. At the same time, there was concern that private sources might not be sufficient adequately to compensate victims of such accidents. Selected Materials, *supra*, at 2-3. The Price-Anderson Act was enacted in 1957 to deal with both these problems, by replacing common law tort remedies with a comprehensive statutory scheme of compensation.

The legislative solution, as most recently extended and amended in 1975, insulates investors, suppliers, and others who might be liable for injuries arising from a nuclear incident, from liability in excess of the sum of the maximum amount of liability insurance available at a reasonable cost and on reasonable terms from private sources (currently \$140 million), plus that available through secondary insurance (currently approximately \$310 million). 42 U.S.C. (Supp. V) 2210(b) (see pp. 3-4, *supra*). In addition, the Act makes available public funds to supplement the private funds available for distribution to those who may be injured up to a total of \$560 million. As

additional reactors are licensed the secondary insurance available will increase proportionally, gradually phasing out the government indemnity and expanding the amount of public protection beyond \$560 million. Thus the Act serves the dual purpose of removing the deterrent to private participation in nuclear energy programs that had been presented by the lack of adequate insurance to cover liability claims and of enlarging the monies readily available for the satisfaction of such claims.

The Act's limitation on liability, which the district court declared unconstitutional, was critical to achievement of the first of these objectives. Unless reversed, the decision below could stand as a major impediment to further private development of nuclear energy in this nation.

2. "It is by now well established that legislative Acts adjusting the burdens and benefits of economic life come to the Court with a presumption of constitutionality, and that the burden is on one complaining of a due process violation to establish that the legislature has acted in an arbitrary and irrational way." *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 15.

a. The district court nevertheless concluded that the statutory limitation on liability violates due process because under the statutory scheme there is no "reasonable certainty that the victims [of a nuclear incident] will be justly compensated" (App. A, *infra*, p. 50a). But there was no such certainty under the common law either: if, as might not even be the case, a defendant were held liable for a common law tort in connection with a nuclear incident, the liability

could well exceed its financial ability to pay damages, so that plaintiffs would be remitted to their remedies as judgment creditors in a bankruptcy proceeding. Due process does not, in any event, require that an injured person recover under a legislative compensation scheme the amount he might have recovered at common law. *New York Central R.R. Co. v. White*, 243 U.S. 188. See also *Second Employers Liability Cases*, 223 U.S. 1. “[L]egislation readjusting rights and burdens is not unlawful solely because it upsets otherwise settled expectations.” *Usery v. Turner Elk-horn Mining Co.*, *supra*, 428 U.S. at 16.

Moreover, contrary to the view of the district court (App. A, *infra*, p. 51a), common law remedies may constitutionally be abolished without the substitution of an alternative remedy as a *quid pro quo*. *Silver v. Silver*, 280 U.S. 117; *Carr v. United States*, 422 F. 2d 1007 (C.A. 4); *Keller v. Dravo Corp.*, 441 F. 2d 1239 (C.A. 5).⁹ Accordingly, in order to promote the use of atomic energy Congress could have limited the tort liability of nuclear power plant licensees, and of contractors engaged in nuclear activities, without providing any alternative compensation. But Congress did provide a compensation scheme, and the district court erred in concluding that that scheme did not afford a *quid pro quo* for the limitation on liability.

The primary benefit afforded potential claimants by the Price-Anderson Act is the assurance that at

⁹ Laws limiting liability without providing alternative compensation have long been recognized and accepted. The statutory limitation on the liability of shipowners, for example, has been in existence since 1851. 9 Stat. 635, 46 U.S.C. 183.

least \$560 million (see note 4, *supra*) will be available for the payment of claims arising from an extraordinary nuclear incident. The maximum amount of liability insurance against such claims currently available is only \$140 million (see note 2, *supra*). The Act therefore guarantees that an additional \$420 million will be available for the payment of claims. Very few defendants held liable at common law for damages caused by a major nuclear incident would be able independently to pay judgments in excess of those amounts. The Act thus provides an important assurance to potential claimants that a large fund will be available to pay claims; without it, the right to sue for damages could be largely illusory. Moreover, in the event of an accident causing damages in excess of the \$560 million limit, Congress has promised that it "will take whatever action is deemed necessary and appropriate to protect the public." 42 U.S.C. (Supp. V) 2210(e).

The Act also provides other benefits. Under the Act and the implementing regulations, licensees are made liable without fault for any damage. 42 U.S.C. (Supp. V) 2210(a); 10 C.F.R. 140.91-140.95. Although the district court believed a theory of strict liability would govern common law claims arising from a nuclear incident (App. A, *infra*, pp. 52a-54a), the legislative history of the Price-Anderson Act indicates that there was substantial uncertainty whether strict liability would be applied in all States and that the provision for liability without fault was included to ensure that victims would be compensated even where accidents were not caused by willful or

negligent acts or omissions. H.R. Rep. No. 2043, 89th Cong., 2d Sess. 6-8 (1966).¹⁰

In short, like workmen's compensation statutes, the Price-Anderson Act substitutes a reasonable statutory compensation scheme for pre-existing tort remedies. Like the comparable provisions of workmen's compensation statutes, therefore, the Act's limitation on recovery comports with the requirements of due process. See *Crowell v. Benson*, 285 U.S. 22; *New York Central R.R. Co. v. White*, *supra*.

b. The statutory limitation on liability does not deny equal protection. The district court concluded otherwise, on the belief that the statute treats unfairly "those injured by nuclear catastrophe" (App. A, *infra*, p. 56a) as compared with the way tort law treats persons injured in other kinds of accidents. But although the treatment of victims of nuclear incidents may be different, it is not unfair. As we have shown above, the statutory compensation scheme affords victims of nuclear incidents a *quid pro quo*; in fact, they may be better off, because of the guarantee of a large fund for payments of damages, than many victims of other accidents who must rely upon common law tort remedies against private tortfeasors with more limited resources.

¹⁰ In addition, the Act provides for emergency assistance payments; for omnibus coverage, including coverage for persons, such as suppliers, who might be without substantial insurance; and for the waiver of any state statute of limitations of less than twenty years. 42 U.S.C. (and Supp. V) 2210(m), (n); see 10 C.F.R. 140.91-140.95.

But to the extent that the limitation on liability, even considered together with all other aspects of the statutory compensation scheme, may result in lesser payments to victims than would be available at common law, the distinction between classes of potential victims "rest[s] upon [a] ground of difference having a fair and substantial relation to the object of the legislation." *Royster Guano Co. v. Virginia*, 253 U.S. 412, 415. In view of the uniquely large liability claims that could arise from a major nuclear incident and the insufficiency of insurance reasonably available from private sources, the limitation on liability was a constitutionally permissible means of removing a substantial deterrent to the private participation in the development of nuclear energy that Congress sought to encourage.

CONCLUSION

Probable jurisdiction should be noted.

Respectfully submitted.

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SEPTEMBER 1977.

APPENDIX A

IN THE
DISTRICT COURT OF THE UNITED STATES
FOR THE WESTERN DISTRICT
OF NORTH CAROLINA

Charlotte Division

C-C-73-139

[Filed Mar. 31, 1977]

CAROLINA ENVIRONMENTAL STUDY GROUP, INC.; CATAWBA CENTRAL LABOR UNION; SANDRA P. REED; DR. JOHN O. P. HALL; MARY GREGORY PHILLIPS HALL; SUZANNE RICHETSON; SHELLEY BLUM; DELORES M. HART; DR. SHERMAN L. BURSON, JR.; DR. JAMES W. CLAY; DR. JULIAN D. MASON, JR.; JULIA A. TALBUTT; JAMES WADE MCHENRY; JESSE RILEY; BOBBY AGLE; SUE S. RILEY; THOMAS L. WOLPERT; DR. CARLOS BELL; DR. JOSEPH A. SLECHTA; ROY ALEXANDER; SARAH SLECHTA; BRUCE BRODT; WILLIAM CONVEY, JR.; DR. RICHARD W. REICHARD; HARRIETT E. REICHARD; RUBY GARDINER; WILLIAM H. VAN EVERY, JR.; ERNIE PATTERSON; HALLAM WALKER; PATRICIA KYLE; DR. KENNETH W. GREGG; DR. LUCKETT V. DAVIS; MELVIN BURRIS; DUKE E. WRIGHT; MICHAEL HUDDLESTON; DR. JOHN A. FREEMAN; TOMMY M. MARTIN; and WILLIAM J. BLOUGH, PLAINTIFFS

UNITED STATES ATOMIC ENERGY COMMISSION; DR. DIXY LEE RAY; JAMES T. RAMEY; DR. CLARENCE E. LARSON, and WILLIAM O. DOUB, as individuals and in their capacities as Commissioners of the United States Atomic Energy Commission; and DUKE POWER COMPANY, DEFENDANTS

MEMORANDUM OF DECISION

Norman B. Smith, Smith, Patterson, Follin & Curtis, 816 Southeastern Building, Greensboro, North Carolina 27401; George S. Daly, Jr., Casey and Daly, 700 Law Building, Charlotte, North Carolina 28202; William B. Shultz and Alan B. Morrison, Suite 700, 2000 "P" Street, N.W., Washington, D. C., counsel for plaintiffs.

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Before James B. McMillan, District Judge

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PRELIMINARY STATEMENT

Plaintiffs brought this action to obtain a declaration of the unconstitutionality of those portions of the Price-Anderson Act, 42 U.S.C. § 2210(c) and § 2210(e), which place a limitation of \$560,000,000 on the maximum amount of liability of a power company or a contractor for damages resulting from a nuclear accident involving an atomic power plant.

Damages and injunctive relief are not sought.

Defendants in their pleadings denied the merits of the claims of the plaintiffs and asserted that the plaintiffs lack standing and that the claims are not ripe for decision.

On the 21st day of May, 1975, at a hearing on the motion to dismiss, it appeared that full dress consideration was desired on the issues of standing and ripeness. Time was allotted, therefore, to develop evidence, and a hearing, four days in length, was conducted on September 27, 29 and 30 and October 1, 1976, on these subjects. Briefs were subsequently filed and the case is ready for decision.

THE PLAINTIFFS

Plaintiffs are a group of people with a common interest in protecting themselves, and other present day citizens and their children, against what they see as the deterioration and destruction of their property and the world they live in. Some of them have fought against nuclear power at numerous administrative and legal levels. They have opposed licensing

the defendant Duke to *construct* nuclear plants, and they oppose ultimate issuance of a license to *operate* those plants after they are completed. They have not slept on their rights. They are vigorously represented by able and experienced counsel. Their claims are seriously advanced. They number people who live and own property on Lake Norman and at other places within short distances of the McGuire Nuclear Plant and the Catawba Plant, now under construction. They include people who have moved away from homes near the nuclear plants and some who plan to leave the area because the plants are being constructed; people whose use and enjoyment of the lakes and their shores (for living, breathing, swimming, fishing, boating, skiing and gardening) will be affected by operation of the plants; people who have legitimate fears that nuclear power plants are dangerous, and who contend that but for the Price-Anderson Act such dangers would not exist.

THE PRICE-ANDERSON ACT

The Price-Anderson Act was adopted in 1957. In pertinent part, 42 U.S.C. § 2210(e), it provides:

“(e) Aggregate liability for a single nuclear incident. The aggregate liability for a single nuclear incident of persons indemnified, including the reasonable costs of investigating and settling claims and defending suits for damage, shall not exceed (1) the sum of \$500,000,000 together with the amount of financial protection required of the licensee or contractor or (2) if the amount

of financial protection required of the licensee exceeds \$60,000,000, such aggregate liability shall not exceed the sum of \$560,000,000 or the amount of financial protection required of the licensee, whichever amount is greater: *Provided*, That in the event of a nuclear incident involving damages in excess of that amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude"

In other words, \$560,000,000 is the maximum amount that all persons injured could recover for injury, death or property damage in the event that a domestic nuclear power plant got out of control.

The Act authorizes the Commission to pay the first \$500,000,000 incurred in investigating and settling claims and defending suits from such an accident, but allows the Commission to require that the power companies themselves provide indemnity for at least the first \$60,000,000. The Commission is authorized to require that this indemnity by the power companies be increased as the Commission may decide up to an amount of \$500,000,000. Some such increases in power company shares in this indemnity have been required, but the \$560,000,000 overall limit remains.

Detailed provisions are made for handling claims. One provision of particular interest is § 2210(o), which says that if, upon petition and showing, a cognizant United States district court determines that a particular incident has produced losses that exceed

the \$560,000,000 limit of liability: (1) payments going beyond 15% of that limit (\$84,000,000) may not be made without court approval; (2) payments above 15% must be under a *plan* of distribution or found to be not prejudicial to the subsequent adoption of such a plan; (3) claims for later discovered and future injuries must be provided for; and (4) all further distribution must be determined by the district judge.

THE NUCLEAR POWER PLANTS IN QUESTION

Defendant Duke Power Company has harnessed many miles of the Catawba River, in Western North Carolina and South Carolina, with numerous dams to supply water for a number of coal fired and water powered and atomic powered electric generating plants. In South Carolina it operates a three-nuclear reactor turbine plant at Oconee, and it has begun the process of building two atomic turbines at a plant on Lake Wylie, also in South Carolina, some fifteen or so miles southwest of Charlotte (population nearly 300,000). The plant on Lake Wylie is called the Catawba Nuclear Station.

In North Carolina, Duke has under construction the McGuire Nuclear Station which is located on Lake Norman, approximately seventeen miles northwest of Charlotte. This plant, a twin-reactor installation of cost reportedly approximating a billion dollars, is nearing completion. Within a fifty-mile radius of each plant, present population is about one and one-

half million people, and estimated population in 2000 A.D. is about two million.

The McGuire Nuclear Station is a twin-reactor nuclear pressurized water (PW) power plant, with turbines and controls, designed to produce power enough to supply a million people (about 1,180,000 kilowatts of net electric energy per reactor).

The "furnace" in each half of the plant is the nuclear reactor chamber, or vessel.

The nuclear reactor chamber is a steel cylinder thirty feet or more long and twelve feet or more in diameter, with steel walls ten inches and more in thickness. With controls and a load of uranium oxide fuel, it weighs about five hundred tons, or one million pounds.

The reactor chamber is situated below ground level in the containment building, which is somewhat more fully described later on. The relative sizes and positions of the reactor chamber within the containment building are very roughly illustrated if one visualizes a somewhat elongated and symmetrical goose egg sitting on one end in a hole in the ground with a ten-gallon can turned upside down above it, and with numerous other pipes, tanks and other installations mounted elsewhere in the can.

Heat is produced in the reactor by splitting atoms. This is done by bringing together a "critical mass" of uranium oxide fuel.

The uranium oxide fuel is contained in cylindrical pellets about the diameter (.366 inches) of a blank .32 caliber pistol cartridge and .60 inches in length.

These pellets are enclosed, end on end, in metal "fuel rods," twelve feet long and .422 inches in diameter. A group of 50 to 200 fuel rods makes a fuel "assembly," and there are several hundred "assemblies" in the reactor "core." Total weight of the fuel thus enclosed in each reactor is about one hundred tons.

No blueprint was supplied as to the exact mechanism by which atomic reactions in the fuel assemblies are started and shut off. Apparently, however, it works this way:

The *fuel rods* in the reactor stand on end, with vacant spaces among them.

Control rods, with some type of insulating or shielding function, are let down from above, and occupy the spaces among the fuel rods and separate the fuel rods, thereby preventing atomic reaction. The physical layout is roughly similar to that which would obtain if one hair brush were laid on a table with its bristles (fuel rods) sticking up, and another hair brush were pressed down on it with its bristles (control rods) pointing down.

When heat is desired, the control rods are lifted, the fuel in the fuel rods starts reacting, and atomic fission or atom-splitting takes place.

When the control rods are re-inserted, atomic *fission* stops and heat *from atomic fission* stops.

However, once atomic fission has been begun, *decay of the atomic materials also begins*, and the atomic fuel continues to decay and give off heat. This radioactive decay continues, unstoppable, for hundreds of thousands of years.

This radioactive decay is in fact the source of about seven per cent of the reactor's output of heat.

In a small reactor this might not be of great significance.

In a reactor the size of those now under construction, this 7% constant heat from atomic decay of 100 tons of uranium fuel is of critical importance. It is about 80,000 kilowatts per reactor—enough heat to supply the power needs of a city of about 35,000 people.

Unlike the controlled nuclear fission, it cannot be shut off.

It is enough heat to melt through the thick steel walls of the reactor core in a few hours, unless it is effectively cooled.

This is called a core melt.

A core melt can melt through the floor and into the earth beneath it.

It can also break through into the containment building and produce an explosion by generating steam in the waters of the cooling system, or in other materials, and rupture the containment building which houses the reactor, and discharge radioactive contaminants into the atmosphere.

This would be the worst of the numerous possible consequences of a nuclear power plant accident.

No *nuclear explosion* is likely or even possible, because the fuel used in nuclear reactors does not contain a high enough proportion of Uranium-235 to produce such an explosion.

However, the capacity to contaminate large areas in the event of a core melt and the escape into the atmosphere of nuclear contaminants is quite large; each reactor contains *about 1,000 times* the amount of radioactive material as the bomb which devastated Hiroshima.

Heat within the reactor, unchecked, can reach 5,000 degrees Fahrenheit.

Taming this heat to produce power and to promote safety is an engineering marvel. Water, in extremely large quantities, is the medium for these purposes.

In regular operation, the plant has two principal circulating water circuits.

The reactor circuit transfers heat from the reactor vessel (the "furnace") to the steam generators (the "boilers"). This is a closed circuit. In the reactor, water is heated to 600 degrees under pressures up to 2,200 pounds per square inch, or "50 to 100 times" the pressures in automobile tires. From the reactor the water goes through pipes to the steam generators, where, still contained in its own closed pipe system, it gives up some of its heat to convert water in the generators into live steam to turn the turbines. It then, as "cool" water (550 degrees) returns to the reactor to be heated again.

The superheated water which circulates from within the reactor vessel to the steam generators and back is of course highly radioactive and in normal operation is not vented to nor discharged into the lake or the atmosphere; it works in a closed system analo-

gous to that of a refrigerator or an air conditioning system.

The second major water circuit brings water from the lake, through various strainers and cleaners, pumps it into the steam generators where it becomes steam, channels it as live steam into the steam turbines where it expands and turns the turbines that turn the electric generators, condenses it back from steam to warm water, and conveys it through cooling basins or towers back to the lake again.

These processes require incredible amounts of water—shown by the Environmental Impact Statement, Government Exhibit 27, page 3-3, if I have read it correctly, as one and one-half million to two million gallons of water per minute. Two million gallons a minute is eight hundred tons a minute or over thirteen tons per second. The entire plant's maximum use of water is 4,610 cubic feet per second (Government Exhibit 27, page 3-1). The average flow of the Catawba River, 1964 through 1974, varied from 1,635 cubic feet per second in 1976 to 3,659 cubic feet per second in 1973.

Discharge of spent cooling water into the lake will raise the temperatures in large areas of the lake to 95 degrees or more in hot weather—with immediate effects on the environment. About 2,200 of the 4,500 megawatts of heat generated will be discharged into the cooling tower and the lake.

For any given electrical output, an atomic plant wastes and discharges about fifty per cent more heat

through warm water than a coal fired plant of the same capacity.

Each nuclear vessel and its steam generators are housed in a "containment building," cylindrical in shape, 125 feet or so in diameter, dome-roofed, and perhaps 190 or 200 feet tall. The function of this building is to contain the products of a nuclear accident if one occurs, and to minimize the likelihood of an escape of nuclear contaminants to the outside atmosphere. It is strongly built. It has a $\frac{3}{4}$ -inch inner steel wall, a center cavity five or six feet thick, filled with ice maintained at zero degrees, and a reinforced outer concrete wall three or four feet thick.

Since 7% or so of the reactor's heat is produced by an un-interruptible radioactive decay process, it is necessary that cooling water be regularly circulated through the atomic reactor *without interruption, even when the furnace is "shut off,"* to prevent a dangerous build-up of heat and a melting of the reactor vessel itself (a "core melt") from decay of the radioactive materials.

Emergency cooling systems are provided to keep the reactor cool in the event the regular cooling systems fail. These stand-by cooling devices are designed to flood the reactor and, if necessary, the containment building in which it is housed, with water, to keep the reactor from melting.

These devices to control the heat in the event of a breakdown are therefore of critical importance; and the most massive and complicated elements in the entire plant are those pumps and pipes and tanks

and valves and electric and hydraulic controls and "back-up" controls which are designed to keep enough water running through and around the reactor vessel to keep it cool in spite of this uninterruptible generation of heat through atomic decay.

There has been no actual operating test of the functional ability of the emergency core cooling systems on a reactor this large, although the various components are carefully designed and individually tested.

Part of the hearing was a guided tour of the McGuire Nuclear Station, the twin turbine plant under construction at Lake Norman.

This tour left the writer thoroughly impressed by two things:

The first is the complexity and monumental nature of the task of handling a beast (or genie) of such tremendous power as an atomic reactor capable of generating one and a quarter million net kilowatts.

The second is the obvious competence and discipline and engineering know-how and determination with which the people of Duke Power Company are pursuing the construction of the plant and the taming of this Promethean power.

If and to the extent that the job can be safely and efficiently done, in the present state of the art, I am satisfied that it is their purpose to do it, and that to the extent it can be done they are accomplishing it.

WHAT A NUCLEAR POWER PLANT DOES TO PLAINTIFFS AND THE ENVIRONMENT

Operation of the nuclear power plants will have *immediate* or present effects and *potential* or future possible effects on plaintiffs and their environment.

Immediate Effects

Immediate effects include the following:

1. It will, despite the stout construction of the containment building, produce immediate additional, non-natural radiation which will in small quantities invade the air and the water where several of the plaintiffs and many thousands of other people live.

2. It will produce a sharp increase in the temperature of several square miles of the two lakes involved. This will make the water too warm for pleasurable swimming and boating in the summertime, will increase the growth of scum or algae and rank water plants, and increase the growth of certain types of fish of the less desirable species. (Coal fired power plants also heat lake water, but atomic plants produce 50% more heat per kilowatt than coal plants.)

3. It will produce present fear and apprehension, objectively reasonable, on the part of the plaintiffs and others, as to the effect of the increased radioactivity in air, land and water upon them and their property, and the genetic effects upon their descendants.

4. It will interfere with normal use of the waters of the Catawba River.

5. Though it has not yet reduced the dollar value of neighboring lands, it threatens to do so; some plaintiffs have moved away because the plants are under construction, and at least one other is sufficiently apprehensive that he intends to move out of the community because the plants are being constructed.

6. The likelihood of an accident resulting in uncontrolled release of large or even small quantities of radioactive material into air, water or land, will constitute a continual threat to the plaintiffs and others similarly situated, based upon the distinct possibility that the plaintiffs may suffer a taking or destruction of their land or their health or their property or their lives, all without adequate assurance that compensation will ever be provided.

Potential Effects

Potential effects are the damages which may result from a core melt or other major accident in the operation of a reactor, or from an accident in transportation of the poisonous waste products of nuclear fission.

Since the plaintiffs do not contend that any single accident in transportation of the poisonous products can produce damages in excess of \$560,000,000, no discussion will be addressed to transportation accidents.

The potential effects from a core melt are a drastically different subject. Such a core melt has never occurred, although one was seriously threatened at Brown's Ferry, Alabama, some years ago by a fire in some insulation which was started by a candle being

used by a workman. Such a core melt could penetrate the earth and reach underground water courses and local rivers and streams, depositing strontium 90 and other poisonous materials, and contaminating drinking water sources for many thousands. A core melt could also vaporize the cooling waters, and certain types of concrete, and produce a pressurized breach of the containment building and discharge large volumes of hot radioactive dust or vapor into the air.

If the air is stagnant, which is often the case, this radioactive material could settle down for the most part in the area near the power plant itself. If a strong wind is blowing, this material might be blown along the ground, contaminating air, land and water in generally pie-shaped segments which might be a few miles or scores of miles in length. If the wind is not too heavy, the heated materials might rise and be transported several miles and then descend to earth and water.

Any of these forms of accidents can produce radiation of temporary or longer duration and varying intensity, and can require evacuation of the areas affected for substantial periods of time. They can produce cancers, thyroid illnesses, genetic effects adverse to later generations, and deaths. The costs of such accidents also include the cost of evacuation and relocation of human beings and industries and farming activity, and the property damage which results.

THE LIKELIHOOD THAT A BAD ACCIDENT
MAY OCCUR, AND THE LIKELIHOOD OF BAD
RESULTS FROM SUCH AN ACCIDENT.

Most of the evidence at the hearing dealt with the likelihood of a major accident and the extent of injury and damage likely to follow from such an accident.

In October, 1975, the United States Nuclear Regulatory Commission published a "Reactor Safety Study," which was a description of the estimated accident risks in United States commercial nuclear power plants. The main volume excluding appendices is 198 pages long and contains a great deal of information and opinion and tables and statistics. Among its estimates and opinions as to the likelihood of core melt accidents and their likely consequences in injuries, deaths and property damage, are several tables (pages 83, 84 and 85, Government Exhibit 14-B) as follows:

**TABLE 5-4 CONSEQUENCES OF REACTOR ACCIDENTS FOR VARIOUS PROBABILITIES
FOR ONE REACTOR**

Chance per Reactor-Year	Consequences				
	Early Fatalities	Early Illness	Total Property Damage \$10 ⁶	Decontamination Area Square Miles	Relocation Area Square Miles
One in 20,000 ^(a)	<1.0	<1.0	<0.1	<0.1	<0.1
One in 1,000,000	<1.0	300	0.9	2000	130
One in 10,000,000	110	3000	3	3200	250
One in 100,000,000	900	14,000	8	—	290
One in 1,000,000,000	3300	45,000	14	—	—

^(a) This is the predicted chance of core melt per reactor year.

TABLE 5-5 CONSEQUENCES OF REACTOR ACCIDENTS FOR VARIOUS PROBABILITIES FOR ONE REACTOR

Chance Per Reactor-Year	Consequences		
	Latent Cancer ^(b) Fatalities (per year)	Thyroid Nodules ^(b) (per year)	Genetic Effects ^(c) (per year)
One in 20,000 ^(a)	<1.0	<1.0	<1.0
One in 1,000,000	170	1400	25
One in 10,000,000	460	3500	60
One in 100,000,000	860	6000	110
One in 1,000,000,000	1500	8000	170
Normal Incidence	17,000	8000	8000

(a) This is the predicted chance of core melt per reactor year.

(b) This rate would occur approximately in the 10 to 40 year period following a potential accident.

(c) This rate would apply to the first generation born after a potential accident. Subsequent generations would experience effects at a lower rate.

TABLE 5-6 APPROXIMATE AVERAGE SOCIETAL AND INDIVIDUAL RISK PROBABILITIES PER YEAR FROM POTENTIAL NUCLEAR PLANT ACCIDENTS ^(a)

Consequence	Societal	Individual
Early Fatalities ^(b)	3×10^{-3}	2×10^{-10}
Early Illness ^(b)	2×10^{-1}	1×10^{-8}
Latent Cancer Fatalities ^(c)	$7 \times 10^{-2}/\text{yr}$	$3 \times 10^{-10}/\text{yr}$
Thyroid Nodules ^(c)	$7 \times 10^{-1}/\text{yr}$	$3 \times 10^{-9}/\text{yr}$
Genetic Effects ^(d)	$1 \times 10^{-2}/\text{yr}$	$7 \times 10^{-11}/\text{yr}$
Property Damage (\$)	2×10^6	—

(a) Based on 100 reactors at 68 current sites.

(b) The individual risk value is based on the 15 million people living in the general vicinity of the first 100 nuclear power plants.

(c) This value is the rate of occurrence per year for about a 30-year period following a potential accident. The individual rate is based on the total U.S. population.

(d) This value is the rate of occurrence per year for the first generation born after a potential accident; subsequent generations would experience effects at a lower rate. The individual rate is based on the total U.S. population.

TABLE 5-7 CONSEQUENCES OF REACTOR ACCIDENTS FOR VARIOUS PROBABILITIES
FOR 100 REACTORS

Chance per Year	Consequences				
	Early Fatalities	Early Illness	Total Property Damage \$10 ⁶	Decontamination Area Square Miles	Relocation Area Square Miles
One in 200 ^(a)	<1.0	<1.0	<0.1	<0.1	<0.1
One in 10,000	<1.0	300	0.9	2000	130
One in 100,000	110	300	3	3200	250
One in 1,000,000	900	14000	8	(b)	290
One in 10,000,000	3300	45000	14	(b)	(b)

^(a) This is the predicted chance per year of core melt considering 100 reactors.

^(b) No change from previously listed values.

TABLE 5-8 CONSEQUENCES OF REACTOR ACCIDENTS FOR VARIOUS PROBABILITIES FOR 100 REACTORS

Chance Per Year	Consequences		
	Latent Cancer ^(b) Fatalities (per year)	Thyroid Nodules ^(b) (per year)	Genetic Effects ^(c) (per year)
One in 200 ^(a)	<1.0	<1.0	<1.0
One in 10,000	170	1400	25
One in 100,000	460	3500	60
One in 1,000,000	860	6000	110
One in 10,000,000	1500	8000	170
Normal Incidence	17,000	8000	8000

(a) This is the predicted chance per year of core melt for 100 reactors.

(b) This rate would occur approximately in the 10 to 40 year period after a potential accident.

(c) This rate would apply to the first generation born after the accident. Subsequent generations would experience effects at decreasing rates.

The Reactor Safety Study contains a caveat that its estimates as to the likelihood of a core melt accident could be in error in either direction by a factor of five and that the estimates of damage from such accidents could also be substantially off the mark in either direction.

Defendants and their witnesses say further that the likelihood of a major nuclear accident is much less than the likelihood of numerous others of the "thousand jolts and shocks the flesh is heir to" (lightning, cancer, motor travel, drowning, etc.), and suggest that it is actually so small that as a practical matter it may be disregarded.

The plaintiffs present a grimmer picture. Their experts say that the Reactor Safety Study was made in part to promote and sell the development of nuclear power and does not provide a realistic estimate of its dangers. They say, among other things, that:

(a) True evaluation of the likelihood of component failure and human failure is impossible.

(b) Not all the causes of malfunctions are known.

(c) The cooling systems being installed by Duke are really untested; they are bigger than any that have yet been tested in operation, and are different in various design features.

(d) With potential damage catastrophic, the various emergency cooling systems should be thoroughly protected and totally separate in their controls and in their use of channels for the cooling water, whereas, in fact, they use common ducts in certain places and common or closely related channels for some of the electrical controls.

(e) Possibilities of sabotage have not been adequately recognized and evaluated.

(f) The decay of efficiency and reliability caused by aging was not fully considered; the Reactor Safety Study claims to be valid only for the first five years of a reactor's life. (Defendants' witnesses testified that in fact the plant would be more safe as it grew older.)

(g) The studies made regarding the likelihood of earthquake damage are not realistic; too little is known about earthquakes to make a scientific evaluation of that subject.

(h) Unforeseen accidents do occur. A major cooling failure occurred at a reactor at Brown's Ferry, Alabama, which was caused by a fire started from a candle being used by a workman; a core melt was prevented only because a pump not designed for the purpose was able to function for several hours and prevent a melt down.

(i) Deficiencies in the reactor safety study were not judged "significant" unless they would indicate a change in the overall net risks by a factor of as much as ten. This is too much tolerance for such a serious business, plaintiffs say.

The United States Environmental Protection Agency made a review (Plaintiffs' Exhibit 22) of the Reactor Safety Study, and also reached some critical conclusions about it. They pointed out that the study (1) failed to evaluate fully the adverse effects on health following an accident; (2) made unduly optimistic assumptions with regard to evacuation and remedial measures; (3) improperly or incompletely evaluated the assumptions made in determining the likelihood of accidents; and (4) did not accurately describe its analyses of the consequences of release of radioactive materials.

These and other deficiencies, according to the Environmental Protection Agency, materially affect the validity of the mathematical conclusions of the study. The Environmental Protection Agency concluded that "the study has understated the risk based on underestimated health effects, evacuation doses, and *probabilities of releases*. The range is believed to be

between a value of one and a value of several hundred." (Emphasis added.) *Id.* at 1-4.

Dr. Henry W. Kendall, Professor of Physics at the Massachusetts Institute of Technology, was one of several witnesses testifying for the plaintiffs. He made a partial interpretation of the Reactor Safety Study itself in a table on page 5 of his written testimony, which is reproduced below:

TABLE

PREDICTED CONSEQUENCES OF ACCIDENTS IN COMMERCIAL LIGHT WATER REACTORS (adapted from RSS App. XI, Table 4-1)

Accident consequences, based on RSS conclusions, that are associated with reactor core melting. According to RSS, an accident with "average consequence is likely to occur with a probability of 1 in 20,000 for each reactor, every year, and an accident with "peak consequences" with a probability of 1 in a billion for each reactor, every year.

	Average Consequences	Peak Consequences
Prompt Fatalities	0.6	3300
Early Illness	40	45,000
Thyroid Nodules (a cancer)	4,000(1)	240,000(1)
Latent Cancer Fatalities	400(1)	45,000(1)
Genetic Effects	400(2)	29,000(2)
Property Damage	\$400 million	\$14 billion
Decontamination Area	600 sq. miles	2000 sq. miles
Relocation Area	40 sq. miles	290 sq. miles
Ground Water Contamination	(3)	(3)

- (1) Effects are assumed to extend uniformly over a 30-year period after an accident.
- (2) Effects are assumed to extend uniformly over a 150-year period after an accident.
- (3) Not tabulated in RSS, but, I believe, extensive. See text for further discussion.

Kendall expressed several opinions sharply challenging the bland conclusions of the Reactor Safety Study. Among other things, he said:

(a) Contamination of the Catawba River could result from a core melt at any of the four reactors under consideration, and would be a high probability in all core melt accidents. This could contaminate drinking water for many thousands of people.

(b) The possibility that one of the four Duke reactors might melt during the 160-odd reactor-years that they might be in service was as much as 4% (R.p. 24).

(c) Among the one hundred reactors laid on for completion in the United States by 1985, the probability of a melt-down involving at least one of those reactors during their normal 40-year lives is between 20% and 80% (R.pp. 26-27).

Dr. Kendall further testified that, taking the study at face value: (1) There is a 2% chance that during the combined service life (160 years) of the four reactors under study (R.p. 24), there will be a nuclear accident with major consequences; and (2) There is about one chance in five years of a melt down among 100 reactors during the normal life of those reactors (R.p. 26).

Kendall expressed the opinion that, because of the errors and misjudgments which he pointed out, the study's estimates of the likelihood of a core melt were too hopeful by a factor of something like ten to one and that the chance that a single reactor might melt during its own individual forty years of service life

was somewhere between 1% and 10%. In another statement (R.p. 46), Kendall indicated that the study might have underestimated the probability of a melting accident with major consequences by factors that might vary between ten times and sixty times!

Dr. Kendall and Robert D. Pollard both testified that in various detailed ways the Reactor Safety Study was unduly optimistic; that it did not evaluate the effects of aging and wear and tear on controls and piping and other machinery; that it only purported to cover the first five years of the life of each reactor; that it did not truly evaluate possibilities of earthquakes and sabotage; that only a few of the possible accident sequences had really been thoroughly evaluated; that some of the stand-by mechanisms were not independent in operation but relied upon common ducts for the handling of water and upon controls which were too closely situated to permit a complete independence of the operation of the emergency cooling systems. (The witness Saul Levine, testifying for the Nuclear Regulatory Commission, conceded that in the Reactor Safety Study there had been some 130,000 possible accident sequences discovered, but that for purposes of the study they had narrowed those accident sequences down to ten, which are considered to be the most likely.)

The Reactor Safety Study was prepared for the Nuclear Regulatory Commission and under its supervision. Of the 140 people who took part, the study indicates that only ten were employees of the Nuclear Regulatory Commission; the rest were called in from

private industry and laboratories and consulting firms.

The tenor of the study is more that of a lawyer's brief than of a detached scientific analysis of risks. It is not signed by any responsible person. However, it is prefaced by the following legend, which is the only printing on the inside cover:

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Nuclear Regulatory Commission, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, nor assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, nor represents that its use would not infringe privately owner rights.

It is of record that throughout the world there have been three hundred or more reactor years of actual operation of nuclear reactors to produce power in public power plants and that none of the plants has yet sustained a core melt nor produced any major damage outside the property of the power company.

CONCLUSIONS AS TO THE LIKELIHOOD AND CONSEQUENCES OF A MAJOR NUCLEAR ACCIDENT

The court finds as a fact that the probability of a major nuclear accident producing damages exceeding

the \$560,000,000 limit of the Price-Anderson Act is not fanciful but real. It is the kind of risk against which prudent business people guard, by trying to design and build safely *and* by reserves or insurance against possible losses and liability to others.

It is not the kind of risk which responsible government or business places upon bystanders.

Plaintiffs have no source from which they can get insurance against loss or damage from atomic radiation; insurance companies, regardless of the odds, won't write policies to cover such losses.

The court is not a bookie.

This case can concern itself too much with the mathematical odds for or against a particular nuclear catastrophe of a particular dimension. The question is not whether a nuclear catastrophe (at two hundred to one or twenty thousand to one) is more or less likely than a tornado, an earthquake or a collision with a comet; the significant conclusion is that under the odds quoted by either side, a nuclear catastrophe is a real, not fanciful, possibility.

The court finds, without being as rosily optimistic as the Reactor Safety Study nor as pessimistic as Dr. Kendall, that a core melt at McGuire or Catawba can reasonably be expected to produce hundreds or thousands of fatalities, numerous illnesses, genetic effects of unpredictable degree and nature for succeeding generations, thyroid ailments and cancers in numerous people, damage to other life and widespread damage to property. Areas as large as several thousand square miles might be contaminated and require

evacuation. Since life of individual human beings, as shown in a number of publicized cases involving death or disability, is now being valued in some cases at sums greatly exceeding a million dollars, it would not require death of or serious injury to many people to exceed the \$560,000,000 Price-Anderson Act limitation now in effect. Nor, in a day when failure of an earthen dam in sparsely populated Idaho can produce property damage reported by the press at about a billion dollars, is it unreasonable to conclude, as I do, that radioactive pollution of a few hundred square miles of heavily populated piedmont North Carolina or South Carolina could well produce property damage vastly exceeding the Price-Anderson ceiling.

**BUT FOR THE PRICE-ANDERSON ACT,
THE NUCLEAR PLANTS WOULD NOT
BE BUILT NOR OPERATED.**

Testimony before the 1956-57 hearings of the Joint Committee on Atomic Energy, United States Congress, indicates that the Price-Anderson Act's limitation on liability, or its equivalent, was a condition precedent to atomic power plants.

Sober corporate managers were unwilling to equip or operate nuclear plants without assurance that someone besides their stockholders would run the major risks.

Pertinent 1956-57 evidence includes statements as follows (from plaintiffs' exhibit 14):

R. T. Schacht, General Manager of Consumer Public Power District, Columbia, Nebraska:

"[A]dequate insurance at reasonable cost could be a major obstacle in the construction and operation of power reactors by anyone other than the Federal Government. The matter of protection against accidents and failures in the nuclear portion of a plant looms as the largest obstacle."

Elmer T. Lindseth, President, Cleveland Electric Illuminating Co., and Member, Edison Electric Institute Committee on Atomic Power:

"[A] formidable roadblock in the path of nuclear power development by private industry will result unless participants in the atomic program will be able to obtain insurance or indemnity protection in what may be termed adequate amounts to cover potential accidents, [however remote]."

Charles H. Weaver, Vice President of Westinghouse Electric Corp.:

"[I]t appears to be virtually unanimously agreed that legislative solution to the public liability problem necessary if one of the principal purposes of the act—"to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes"—is to be possible.

* * * *

"[I]f the financial protection needed is not reasonably available, *we will not be able to go ahead* with the Westinghouse testing reactor [at Waltz Mill, Pa.]" (Emphasis added.)

Lewis L. Strauss, Chairman of the Atomic Energy Commission:

"No single thing that your committee might do could contribute so greatly to the acceleration of nuclear power development in the United States as would early and favorable action on this subject [liability for nuclear accidents]."

Francis K. McCune, Vice President, General Electric Company:

"At present I see no alternative but to recommend that work on the Dresden station be halted as soon as practicable after the end of this session of Congress in case appropriate legislation has not been passed by that time. Also, as I now see it, it is my view that General Electric should not take on any other comparable project if it appears that appropriate legislation will not be passed."

The situation was only slightly different in September 1975. Testifying in favor of the renewal of the Price-Anderson Act, witnesses said:

Testimony of John W. Simpson, Chairman, Atomic Industrial Forum:

"[S]uppliers of nuclear system components like pumps or valves who have a small economic stake in the nuclear business will probably remain unwilling or reluctant to undertake new projects if their risks are not constrained. In addition, financing for new projects, already a difficult matter because of general economic conditions, will be more expensive, if available at all, without Price-Anderson protection."

Hubert H. Nexon, representing Edison Electric Institute:

"[I]n 1957 when Price-Anderson was first passed . . . no utility would undertake construction of a nuclear plant without the protection this statute afforded.

* * * *

"In any event, utilities are not free to decide as they please the question of whether to build nuclear plants. It is entirely likely that whether or not utilities are willing to proceed, expiration of Price-Anderson would leave them unable to do so or make going forward much more difficult.

"[S]ome vendors of nuclear steam supply systems may be unwilling to proceed without Price-Anderson protection.

"In the past, proposals for nuclear steam supply systems have been conditioned on the availability of Price-Anderson protection. Whether the vendors will be willing to proceed without it is not yet clear.

"As Mr. Simpson observed, there are many suppliers of nuclear system components, such as pumps, seals, or valves, who have a relatively small economic stake in the nuclear business, but who would be exposed by law, absent Price-Anderson, to the same order of risk as power-plant operators and major vendors.

"In the past, such suppliers have frequently asked for inclusion of provisions with respect to Price-Anderson protection in their contracts.

"Architect-engineers, with a large potential liability, nevertheless have a rather narrow economic base, and I am informed that often they have also insisted on Price-Anderson protection.

"[I]t is not at all clear what the expiration of Price-Anderson will do to the ability of utilities who plan nuclear plants to raise capital.

"Certainly, all electric utilities have found it increasingly difficult to compete in the money market. Failure to extend Price-Anderson is very likely to increase these difficulties."

Testimony of Morgan D. Dubrow, National Rural Electric Cooperative Association:

"NRECA anticipates that the expiration of this nuclear liability insurance would result in serious difficulties and perhaps preclude any utilities efforts to obtain the necessary regulatory authority and adequate financing."

Testimony of Lawrence S. Hobart, American Public Power Association:

"For instance, the Sacramento Municipal Utility District, which is now considering construction of a second nuclear unit, reported last year that:

"SMUD has already found that engineering and manufacturers are requiring cancellation options in their contractual relationships with utilities should new nuclear facilities not receive construction permits prior to August 1, 1977, unless satisfactory financial indemnification legislation be in effect at that time.' "

Statement of Harry O. Reinsch, President, Bechtel Power Corporation ("major engineer-contractor of nuclear power plants") dated September 23, 1975:

"In the event that the protection afforded by Price-Anderson is allowed to lapse, we envision additional problems which could jeopardize the further development of nuclear power in this country. For example, there are a considerable number of companies whose goods and services are essential to the nuclear power industry. But because of small size or limited resources they would find that the exposure to a potentially large liability was completely out of proportion to their resources. Consequently, they would be obliged to withdraw from the nuclear supply business. Further, any small or medium size companies seeking to broaden their scope would find the nuclear field essentially closed to them. Additionally, some utilities may conclude that the resulting unlimited liability would affect their financial rating to such an extent that construction and operation of additional nuclear plants would not be prudent."

Telegram from T. E. Bennett, Vice President of Ingersoll-Rand Co.:

"In the absence of a finite limit of liability provided to us by either the public or private sector under a suitable omnibus clause, Ingersoll-Rand would find it necessary to withdraw from supplying such key components for nuclear power plants."

Letter from Fred R. Rippy, President of Fred R. Rippy, Inc. ("supplier to Babcock & Wilcox of very

minute parts that go into nuclear power plants”), dated September 26, 1975:

“Since we would not be able to protect ourselves with insurance [in the event that Price-Anderson is not extended], we would probably not be willing to bid on this type of work, even though we are, to our knowledge, a sole supplier and one of the few with our particular capability in the United States.”

Discussion paper from Atomic Industrial Forum:

“. . . The first could be the cessation of nuclear business by a number of suppliers of components for whom the nuclear business is but a small portion of their total business activity. . . . As to operating utilities, some have indicated that they would continue to order nuclear power plants even without this legislation. Whether they would in fact have the ability to do so would depend to large extent on their financial situation.”

Letter from Duke Power Company to Joint Committee on Atomic Energy, *Hearings before Joint Committee on Atomic Energy*, on H.R. 8631:

“Duke Power is an electric utility providing about 21½ percent of the nation’s electric power to over one million customers in the Piedmont section of North and South Carolina. Recognizing nuclear power’s substantial savings to consumers, Duke Power’s commitment to commercial nuclear power began in 1966. Today, the company has three nuclear generating units in service, four more under construction, and six more

for which applications have been filed for construction permits.

"Because of risks as perceived by others, passage of HR 8631 to extend the Price-Anderson Act for ten years is necessary if nuclear power is to play its essential role in meeting our nation's energy needs. As a nuclear utility, we rely upon others to supply equipment and materials and to supply capital for our nuclear plants. It matters little that we feel that nuclear power without Price-Anderson would still provide enormous benefits to the public far outweighing the infinitesimal risk to them. It is important how *our suppliers and investors* perceive risks to them from nuclear power. Perhaps influenced by the scare stories from nuclear opponents, they *need the assurance of Price-Anderson if they are to supply equipment and capital at a reasonable price, or at all.* (Emphasis added.)

"A major supplier has included a provision in his proposed contract that if the nuclear unit is not covered by an extension to Price-Anderson, the contract shall be cancelled and we shall reimburse the supplier for all his costs plus a reasonable profit thereon. Another supplier of medium sized, but important equipment, has advised that if Price-Anderson is not extended, that he will no longer supply the nuclear industry, but concentrate on his other markets. There are only a very few suppliers of his line of equipment, and his loss would reduce competition, thus hurting the consumer since higher plant costs must be recovered through electric rates.

Small suppliers and businessmen who sell only a few thousand dollars worth of materials and services for a multi-million dollar nuclear plant ask to be indemnified under Price-Anderson coverage to protect them against third party claims that they perceive in enormous amounts compared to their small nuclear-related sales volume.

"Meeting our nation's energy needs will continue to require very large amounts of new capital. This will only be provided by confident investors. Failure to extend Price-Anderson could well cause some erosion of this confidence, resulting in higher cost of capital and/or inadequate supply. Such a consequence would only add to the consumer's economic burden."

Letter from W. M. Vannoy, Group Vice President, Power Generation Group, Babcock & Wilcox, dated March 20, 1974:

"The possibility of material change in the protection now afforded by the provisions of the Price-Anderson has caused us, as trustees for our stockholders, to include suitable protection clauses in new proposals. Also, in the event of unfavorable congressional action, we may well be forced to reconsider our role in the nuclear industry."

The testimony of Mr. W. S. Lee, Vice President of Duke, at the hearing in September, 1976, as to whether he thought Duke would proceed with nuclear plant construction and operation without Price-Anderson, was as follows:

"We would attempt to. A decision as to whether to proceed without the Act would depend upon a weighing of what we know about nuclear power compared to how others perceive nuclear power. From what I know about nuclear power, it would be my recommendation that Duke proceed even in the absence of Price-Anderson. However, from the point of view of how others perceive nuclear power, there is some question about whether it would be a practical undertaking in the absence of the Act. To build any type power plant requires that we raise capital by selling new securities in the marketplace to thousands of willing, volunteer investors. Also, to build any type power plant requires materials, equipment and services to be supplied by hundreds of suppliers, both large and small. Whereas my study and experience gives me great confidence in the safety of nuclear power, and I say this after careful consideration of the questions raised by these plaintiffs as well as other critics, a member of the general public cannot be expected to view this complex subject in the same manner. This is especially true with today's publicity of questions surrounding nuclear power safety. The hundreds of suppliers that furnish components like bolts or wires to our quality specifications where the supplier may not be aware of the ends use of his product. [Sic.] He doesn't have to be well informed about nuclear safety to sell his product. Yet, I understand why he does not want to be exposed to a risk that he may perceive. I have already been advised by several firms that the existence of Price-Anderson is required for them to be a supplier to our nuclear program. It is important that we have

a number of qualified suppliers to provide competition for the thousands of components required to build the plant. If Price-Anderson did not exist, I would therefore have to evaluate the extent to which its absence caused disappearance of suppliers from the marketplace in arriving at my recommendation."

Without the protection of the Price-Anderson Act, regardless of the desires of the nuclear power industry, power companies would probably not be able to obtain the necessary financing, supplies, and architectural skills to build nuclear power plants and to maintain them once construction was complete.

PLAINTIFFS HAVE STANDING TO SUE

Defendants assert that plaintiffs have no standing to bring this action to test the constitutionality of the Price-Anderson Act. They also assert that there is no live "case" or "controversy" to support federal jurisdiction.

Standing, in simple terms, is a requirement that the plaintiffs have been injured or be threatened with injury by the governmental action complained of. *Flast v. Cohen*, 392 U.S. 83 (1967), held that taxpayers challenging the spending of federal funds in violation of the "establishment" and free exercise clauses of the First Amendment were entitled to maintain the suit, even though their share of the taxes lost was no more proportionately than the share of other taxpayers. They had, the Court said, established (a) a logical link between their status as

taxpayers and the law under attack, and (b) a connection between their status as taxpayers and the precise nature of the constitutional violation, which must be a violation of a specific constitutional protection against abuse of legislative power. They had, according to the Court, alleged

“the gist of the question of standing”;

that is (392 U.S. at 99), they had

“alleged such a personal stake in the outcome of the controversy as to assure that concrete adverseness which sharpens the presentation of issues upon which the Court so largely depends for illumination of difficult constitutional questions.” (Emphasis added.)

citing *Baker v. Carr*, 369 U.S. 186, 204 (1962).

“Standing” focuses upon the litigant and raises the question whether the litigant is the proper party to fight the lawsuit, not the question whether the issue itself is justiciable.

Arlington Heights v. Metropolitan Housing Development Corp., et al., United States Supreme Court No. 75-616, January 11, 1977 (45 LW 4073, 1/11/77), is of current relevance. The Court upheld the right of a real estate development corporation and a probable tenant to challenge a municipality's refusal to rezone a lot in order to make it possible to build apartments for probable occupancy by blacks and Mexican Americans in a restricted neighborhood. Mr. Justice Powell, writing for the majority, made several comments on the question of standing:

“... When a project is as detailed and specific as Lincoln Green, a court is not required to engage in undue speculation as a predicate for finding that the plaintiff has the requisite personal stake in the controversy. MHDC has shown an injury to itself that is ‘likely to be redressed by a favorable decision.’ *Simon v. Eastern Kentucky Welfare Rights Org.*, 426 U.S. at 38. [45 LW 4073, 4076]

* * * *

“The injury Ransom asserts is that his quest for housing nearer his employment has been thwarted by official action that is racially discriminatory. If a court grants the relief he seeks, there is at least a ‘*substantial probability*,’ *Warth v. Seldin*, 422 U.S. at 504, that the Lincoln Green project will materialize, affording Ransom the housing opportunity he desires in Arlington Heights. His is not a generalized grievance. Instead, as we suggested in *Warth, id.*, at 507, 508 n. 18, it focuses on a particular project and is *not dependent on speculation about the possible actions of third parties not before the court*. See *id.*, at 505; *Simon v. Eastern Kentucky Welfare Rights Org.*, 426 U.S. at 41-42. Unlike the individual plaintiffs in *Warth*, Ransom has adequately averred an “actionable causal relationship” between Arlington Heights’ zoning practices and his asserted injury. *Warth v. Seldin*, 422 U.S., at 507. We therefore proceed to the merits.” [45 LW 4073, 4077] [Emphasis added.]

Standing is dependent on the facts. Facts of this particular case bearing on standing include these:

(a) The nuclear reactor-turbine plants would not be under construction and are not likely to operate without the guaranty of limited liability provided by the Price-Anderson Act. There is a "but for" causal connection between the Act and the construction of the nuclear plants which the plaintiffs view as a threat to them. The fact that insurance or indemnity *might* have been made available, or might yet be made available in some other fashion, does not prevent the Price-Anderson Act from being causally connected with the construction; the agency which provides the financial security for the stockholders is, in fact, the Price-Anderson Act, and it thereby becomes a "but for" cause of the construction.

In addition, there is a substantial likelihood that Duke would not be able to complete the construction and maintain the operation of the McGuire and Catawba Nuclear Plants but for the protection provided by the Price-Anderson Act.

(b) Operation of the plants will cause *present and certain* injury to the plaintiffs. It will release a small but regular amount of radioactive energy at all times following the start-up of the nuclear reactor. This radioactive matter will add measurably to the radioactivity in the air and water and land in the neighborhood of the plant. These radioactive emissions will invade the air and water and the bodies and genes of plaintiffs and others in the neighborhood. The long term results of adding radiation in these quantities

are estimated to be slight; however, since nuclear physics is a relatively recent science and the experimental data is scanty, there is no way to tell short of a few generations what this unwanted and unintended radioactive invasion of the air, ground and water will do to human and other beings.

(c) Plant operation will produce a substantial increase in the temperature of the waters of the lake. This increase in temperature will disturb the balance of animal and plant life; will increase the growth of algae and various types of plants; and will affect the breeding and feeding and migration habits of fish. It will produce favorable conditions for certain types of fish, especially in cold weather, but unfavorable conditions for some more desirable types of fish. The heat will also detract from the recreational value of the lake.

(d) The threat and present fear of future catastrophic accidents is real and objectively reasonable. Though no true *atomic explosion* can occur in a nuclear power plant, nevertheless, there is the real possibility that an accident can occur which will breach the containment building and distribute radioactive poison over wide areas and cause wholesale illnesses, cancers, thyroid ailments, genetic injuries and deaths, and major property damage. The full effects of such radiation, whether great or acute, on humans and

on milk and other foods and on property can be accurately determined only by experience.

(e) There is the possibility, estimated by witnesses at from one chance in millions to one chance in a few score that the cooling system will fail and that the reactor core will melt and rupture the containment building and discharge *large* quantities of contaminants over a *wide* area. If such a melt-down accident occurred it could eventually poison the air for thousands, and the Catawba River for long distances, thereby indefinitely polluting the water supply for many thousands of people.

(f) Some of the plaintiffs live within a half mile or less of a reactor site; one has moved away from the site because of the construction of the plant.

(g) Charlotte is twelve to fifteen miles in diameter; it is only seventeen miles southeast from the McGuire plant and sixteen miles or so northeast from the Catawba plant and, thus, is a different direction from each; and the winds in these parts, like the winds in most places, are variable. More significantly, however, the evidence shows that Charlotte is not the only possible target; both of these plants are so located that regardless of which way the wind blows, it blows towards many thousands of people.

(h) Recoveries in cases of injury to and death of a human being have been known in recent years to exceed a million dollars and more. With-

out even considering property damage, it appears that death or major injuries to 500 or 1,000 people could produce legitimate losses vastly exceeding \$560,000,000.

It thus appears that the plaintiffs and the class they represent have a present interest in the construction of the plant; they will suffer a small amount of chronic damage when the operation of the plant begins and they presently have an apprehension, which is objectively reasonable in nature, that future and perhaps major damage may be caused by uncontrollable leaks or ruptures of the containment devices. They as plaintiffs have a live and personal stake in provision for financial responsibility for undesired effects if all safeguards fail.

THIS IS A LIVE CONTROVERSY RIPE FOR DECISION

Plaintiffs in this action suffer two kinds of injuries. First is the present everyday injury through heat and radiation of living in proximity to an operating nuclear power plant. The second is the reasonable possibility that there will be a nuclear accident that will cause them injury for which they will not be fully compensated as a result of the liability limit of the Price-Anderson Act.

The unwanted and compelled present exposure to increase of radioactive contamination, the heating of the lakes, and the threat of having to make the Hobson's choice of moving away or living with a constant

and present fear of future catastrophe are themselves injuries which give rise to an immediate right of action for redress. Under the law of North Carolina a right of action arises as soon as a wrongful act has created "any injury, however slight," to the plaintiff. *Sellers v. Friedrich Refrigerators, Inc.*, 283 N.C. 79, 82 (1973); *Jewell v. Price*, 264 N.C. 459 (1965); *Thurston Motor Lines v. General Motors Corp.*, 258 N.C. 323 (1962). After the cause of action accrues, if a suit is not brought within the time limitation set by statute, such a suit will be barred. North Carolina General Statutes § 1-15(a). Not only is plaintiffs' action ripe, but also, if plaintiffs did not bring the suit within three years after the injury began, their action might be barred.

Plaintiffs' exposure to injury from a nuclear accident for which the Price-Anderson Act will prevent full compensation is not a certainty but it is much greater than a fanciful possibility. The possibility of this taking, comparable to the "erosion taking" dealt with in the *Regional Rail Reorganization Act Cases*, 419 U.S. 102 (1974), even without the certain present injuries described above, establishes the ripeness of this action.

The *Regional Rail Reorganization Act Cases*, *supra*, appear to be pertinent. Congress enacted a law authorizing eight major railroads to continue to operate under court supervision under Section 77 of the Bankruptcy Act. Plaintiffs, owners of interests in Penn Central, attacked the constitutionality of the statute, contending that it took property without just compen-

sation, asserting that the securities offered them in exchange were not a *quid pro quo* and that the compulsory operation of the railroads would erode their equity in Penn Central (this was called "erosion taking"). The district court entertained the "erosion taking" issue, said it was not premature, said that the constitutionality of the Act should be dealt with on its merits, and ruled that the Tucker Act in the context was unconstitutional. The issue was "ripe" for adjudication. The Supreme Court, agreeing as to "ripeness," said, in pertinent part:

"... It is therefore reasonable to conclude that compelled continued rail operations under these conditions pending implementation of the Final System Plan *may* accelerate erosion of the interests of plaintiffs below through accrual of post-bankruptcy claims having priority over their claims. Thus, failure to decide the availability of the Tucker Act would raise the distinct *possibility* that those plaintiffs would suffer an 'erosion taking' *without adequate assurance that compensation will ever be provided. Yet there must be at the time of taking 'reasonable, certain and adequate provision for obtaining compensation.'* *Cherokee Nation v. Southern Kansas R. Co.*, 135 U.S. 641, 659 (1890); see also *Joslin Mfg. Co. v. City of Providence*, 262 U.S. 668, 677 (1923); *United States v. Dow*, 357 U.S. 17, 21 (1958). Therefore we must determine if the Tucker Act is available." (Emphasis added.) 419 U.S. 102, 124-25 (1974).

The "erosion taking" of the *Regional Rail Reorganization Act Cases* was far from a certainty. It

was only to happen if the Final System Plan was not implemented within a reasonable time. Furthermore, only events unforeseen and unanticipated would cause the delay.

There is a distinct possibility in this case, as in the *Regional Rail Reorganization Act Cases*, that plaintiffs will suffer a taking without assurance that compensation will be provided.

The plaintiffs are directly, immediately and personally interested in the event; they allege and have shown that they will be immediately injured when the plant starts operating; there is a real possibility that the injury may become catastrophic; they are faced with probable and possible injuries without "reasonable, certain and adequate provision for obtaining compensation," which the *Regional Rail Reorganization Act Cases* properly required.

Plaintiffs have shown that the Price-Anderson Act has been an indispensable element—a "but for" cause—of the construction of atomic power plants and their threatened operation, and that without the Price-Anderson Act, either there would be no nuclear plants or there would be insurance or other security to cover their threatened losses; they are entitled to challenge the Price-Anderson Act on its merits.

THE PRICE-ANDERSON ACT IS UNCONSTITUTIONAL

The Price-Anderson Act limits the total liability for a single nuclear incident, including defense costs, to \$560,000,000; it establishes a claim handling proce-

ture which contemplates that the entire problem of adjusting claims will be dumped in the lap of a cognizant United States District Judge if it looks as though losses may exceed the liability limits; payments beyond 15% of the limit (\$84,000,000) may not be made without court approval; such payments above \$84,000,000 must be made pursuant to a "plan of distribution" (or found by a court not to interfere with a future plan); claims for later and future injuries must be provided for and decided by the judge; some such claims may not mature for several decades, and in the meantime uncertainties will cloud settlement of fully matured claims.

For a number of reasons, the Price-Anderson Act violates the Equal Protection and Due Process provisions of the Fifth Amendment to the United States Constitution.

DUE PROCESS

The Act violates the Due Process Clause because it allows the destruction of the property or the lives of those affected by nuclear catastrophe without reasonable certainty that the victims will be justly compensated. Considerations that lead to this conclusion include the following:

1. The amount of recovery is not rationally related to the potential losses. Abundant evidence in the record shows that although major catastrophe in any particular place is not certain and may not be extremely likely, nevertheless, in the territory where these plants are located, damage to life and property

for this and future generations could well be many, many times the limit which the law places on liability.

2. The Act tends to encourage irresponsibility in matters of safety and environmental protection rather than to encourage responsibility on the part of builders and owners. This is contrary to the purpose of the Atomic Energy Act, which declares the policy of the United States to encourage "widespread participation in the development and utilization of atomic energy for peaceful purposes *to the maximum extent consistent with the common defense and security and with the health and safety of the public.*" 42 U.S.C. § 2013(d). (Emphasis added.) It is true that power companies have other incentives to build carefully, because a core melt down or other major disruption of a nuclear steam generator would be a devastating blow to the treasuries of even the largest power companies such as Duke. Nevertheless, when a low ceiling is placed on accountability to the public, the *tendency* of such low ceiling is to diminish rather than to heighten steps necessary to protect the public and the environment.

3. There is no *quid pro quo*. The defendants contend that the limitation of liability is justified by an exchange of burdens and benefits, and that although there may be a limit on recovery, this is compensated for by certainty of recovery, prompt release of funds, extension of [some] short statutes of limitation, and elimination of some theoretical defenses. They cite as authority workmen's compensation acts (*New York Central Railroad v. White*, 243 U.S. 188 (1917));

longshoremen's act (*Crowell v. Benson*, 285 U.S. 22 (1932)); the Warsaw Convention (limiting liability for death in international air traffic) (*Indemnity Insurance Company of North America v. Pan American Airways*, 58 F.Supp. 338 (S.D.N.Y. 1944)), and others. These authorities do not support the Price-Anderson Act. The reasons, among others, are these:

(a) Those who operate nuclear reactors give up nothing of consequence when they waive defenses of negligence, contributory negligence, assumption of risk and governmental or charitable immunity. Assumption of risk and contributory negligence do not bar a citizen from recovery for damage caused by trespassing radioactivity. Power companies don't have governmental or charitable immunity. Under the law of North Carolina, for example (and I understand it to be essentially like that of other states), people who handle highly explosive or dangerous substances are liable to others for damages caused thereby, even in the absence of traditional negligence. The principle goes back to the British case of *Rylands v. Fletcher*, L.R. 3 H.L. 330 (1868), which held the owner of the dam liable to downstream landowners whose property was damaged when the dam burst.

The courts of North Carolina have adopted the principle of *Rylands v. Fletcher* and hold those who engage in ultra-hazardous activities to a standard of strict liability. North Carolina law has been used to impose liability without proof of any negligence on those engaged in rock blasting, *Guilford Realty v.*

Blyth, 260 N.C. 69, 131 S.E.2d 900 (1963); on those engaged in quarrying rock, *Paris v. Carolina Portable Aggregates, Inc.*, 271 N.C. 471, 157 S.E.2d 131 (1967); and on those who fly airplanes at supersonic speeds causing sonic booms, *Nelms v. Laird*, 442 F.2d 1163 (4th Cir. 1971), rev'd. on other grounds, *Laird v. Nelms*, 406 U.S. 797 (1972).

The courts of North Carolina have not yet had the chance to apply the rule of strict liability to nuclear power plants. However, the considerations that have led to the application of strict liability are all present in the generation of nuclear energy. It is an intrinsically ultra-hazardous activity, and, when done near large population centers, it is "impossible to predict with certainty the extent or severity of the consequences." *Trull v. Carolina-Virginia Well Company*, 264 N.C. 687, 691, 142 S.E.2d 622, 624 (1965).

The philosophy behind the imposition of strict liability is that "[t]he law casts the risk of the venture on the person who introduces peril into the community. Blasting operations are dangerous and should pay their own way." *Trull v. Carolina-Virginia Well Co.*, 264 N.C. at 691. This allocation of risk is applicable to the generation of nuclear energy as it is to blasting.

The doctrine of strict liability for abnormally dangerous conditions and activities is discussed in Prosser, *The Law of Torts* (4th Ed. 1971), at pp. 505-516. In that section Prosser concludes:

"Although rockets already have made their appearance in the field of strict liability, the first

case raising the question as to the use of nuclear energy has yet to reach the courts. When it does, it may be predicted with a good deal of confidence that *this is an area in which no court will, at last, refuse to recognize and apply the principle of strict liability found in the cases which follow Rylands v. Fletcher.*" (Emphasis added.) Id. at 516.

Thus, in case of nuclear catastrophe, giving up the requirement that plaintiffs prove negligence is giving up nothing of substantial value.

(b) An airline passenger or a shipper of freight does in theory have an option; he can stay home or travel or ship by other means; there is some basis to justify the limitation on liability when he puts his own body or his property aboard the conveyance. By contrast, the neighbor of a nuclear power plant, or the person caught by chance in the contaminated area, has no option at all.

(c) Prompt release of funds without prolonged litigation is *not* afforded. The Act promotes *uncertainty* rather than certainty and delay rather than promptness in the settlement of claims. Once settlements pass a total of \$84,000,000 (15% of the ceiling), payments stop and the whole problem is referred to a nearby district judge. Thereafter, claims can not be settled on their own merits, but must be settled in terms of a "proportion" of the available funds. These settlements have to be partial or contingent for times that may extend into decades in order to comply with the Act's provision for reserves for late developing claims or lately discovered damage. Since later

generations may be involved in such claims, the one thing certain about this procedure is uncertainty.

(d) Unlike claims under workmen's compensation and the Warsaw Convention, the amounts of the potential small recoveries allowed by the Price-Anderson Act are not even certain; since the maximum total liability does not vary with the number of people injured, the recoveries must be simply *proportions* of the fund, bearing more relationship to the number of people injured than to the severity of the injury of the individual.

(e) The Warsaw Convention was a *treaty* rather than an Act of Congress; treaties with other nations don't follow the same rules as lawsuits or ordinary Acts of Congress. Moreover, plaintiffs point out that the United States in 1965 denounced the Warsaw Convention and resumed endorsement of it a year later only after agreement was reached sharply increasing liability to United States passengers to \$75,000 instead of the \$8,500 which had theretofore obtained.

(f) The omnibus nature of the coverage (providing payments for injuries caused by even financially irresponsible wrong-doers) is not a redeeming feature; omnibus coverage could be provided under a fair plan just as well as under this unfair plan.

(g) Waiver of [some] short statutes of limitations affects only the *time when the potential remedy can be asserted by suit and does not affect the fairness of the underlying right*. Many statutes of limitations, see, for example, North Carolina General Statutes

§ 1-15(b), already provide for tolling of rights of action where damage is hidden or not discovered until later.

(h) A further problem with Price-Anderson is that the limit is absolute and applies to nuclear catastrophe even though it may be the result of wilful conduct or gross negligence.

(i) It was argued orally that in the event of a nuclear catastrophe, somebody by executive action or Congress by special Act under the 1975 proviso to § 2210(e) *might* make some "relief" immediately available. Mr. Micawber would like that idea. It may well be so, and I hope it would be. However, the fact that a future Congress might be more generous than past Congresses have been wise would still leave the Price-Anderson Act short of providing the "reasonable, certain and adequate provision for obtaining compensation" which due process of law requires. *Regional Rail Reorganization Act Cases*, 419 U.S. 102, 124-25; *Cherokee National v. Southern Kansas Railroad Company*, 135 U.S. 641, 659 (1890).

EQUAL PROTECTION

The Act violates the equal protection provision that is included within the Due Process Clause of the Fifth Amendment because it provides for what Congress deemed to be a benefit to the whole society (the encouragement of the generation of nuclear power), but places the cost of that benefit on an arbitrarily chosen segment of society, those injured by nuclear catastrophe. This conclusion is reached by

considering the reasons that lead to the holding that the Act violates the Due Process Clause, plus the following:

1. The statute irrationally places the risk of major nuclear accident upon people who happen to live in the areas which may be touched by radioactive debris. No necessity is suggested for using such geographical happenstance as the basis for allocating the burden of loss.

2. The Act irrationally and unreasonably places a greater burden upon people damaged by nuclear accident than upon people damaged by other types of accidents, such as motor vehicle or electrical accidents, involving power companies.

3. The Act unreasonably and irrationally relieves the owners of power plants of financial responsibility for nuclear accidents and places that loss upon the people injured by such accidents who are by definition least able to stand such losses.

4. The limitation is unnecessary to serve any legitimate public purpose. Other arrangements rationally related to the interests asserted could easily be devised. For example, a liability pool could be established, requiring either contributions in advance, or liability for assessment on a unit basis or otherwise, of all power companies building or operating nuclear generators. This would effectively place the responsibility upon the group most directly profiting from any improvement in the costs or usefulness of electric power—the power company stockholders and the customers themselves. Another rational alternative

would be to make such accidents a national loss and to pay those damaged out of the federal treasury. This would spread the loss among those who benefitted indirectly by having the nation's power supply increased as well as among those who presumably benefitted directly.

No federal case in point on the equal protection issue has been cited. Perhaps Congress has never before (without compensating factors absent here) passed a law placing the potential burden of major industrial catastrophes solely upon the victims of such catastrophes.

Two state supreme courts have, however, considered statutory efforts to limit recovery for damages for medical malpractice, and have based their holdings on reasoning similar to that employed here. *Wright v. Central DuPage Hospital Ass'n.*, 63 Ill. 2d 313, 347 N.E.2d 736 (Illinois Supreme Court 1976) (\$500,000 limit invalid); *Jones v. State Board of Medicine*, 97 Idaho 859, 555 P.2d 399 (Idaho Supreme Court 1976) (\$150,000 limitation; remanded for further consideration of the facts in light of the principles articulated).

Perhaps if the presumed stakes were not so high, the correctness of those decisions would be obvious to all the litigants here.

Some of the witnesses so minimized the risks of nuclear power plants that the court is tempted to forget the evidence to the contrary and to conclude

that there are no major dangers, and to say, like Pollyanna, that "everything will turn out all right." That temptation subsides in light of the strong evidence that the dangers are real, and when it is remembered that the Price-Anderson Act was sold to Congress in 1956 and re-sold in 1975 by government and industry spokesmen as being necessary to induce power companies and investors to build atomic power plants. In those days, they sought the Price-Anderson Act's limitation on liability upon a practical premise more consistent with Robert Burns' classic thought that

"The best laid schemes o' mice an' men
Gang aft agley
An' leave us nought but grief an' pain
For premised joy."

CONCLUSION

Plaintiffs are threatened with certain injury of relatively minor nature, and with the reasonable likelihood of major and perhaps catastrophic injury, without assurance of adequate compensation if that should occur. But for the limitation of the Price-Anderson Act, the nuclear power plants would not be being built and those threats would not exist. Plaintiffs are actively pursuing the case. They have a live stake in the controversy and are sufficiently aroused that their position has been well and adequately presented. A live case or controversy exists; they have standing; the issue is ripe for decision and there is no need to wait until a reactor accident

occurs before deciding the case. The time to put on the roof is before it starts raining. The question of the constitutionality of the Price-Anderson Act should be decided now.

Injunctive relief is not sought and is not contemplated; at the time this action was filed one federal district judge had no authority without the concurrence of one of two other judges to issue an injunction based upon the unconstitutionality of an Act of Congress.

The question is, however, whether or not to declare the constitutional rights of the parties.

Granting declaratory relief in this case is not likely to interrupt the operation of the statutory scheme before the parties can seek to have the Supreme Court finally adjudicate the issue. *Kennedy v. Mendoza-Martinez*, 372 U.S. 144, 154-55 (1963). A direct appeal lies should the parties choose that route. 28 U.S.C. § 1252.

This court like other courts has a duty to "faithfully and impartially discharge and perform all the duties incumbent upon [a] United States District Judge . . . agreeable to the Constitution and laws of the United States" The Constitution is the "supreme law of the land." Only by forthright recognition of rights reserved to the people by the Constitution and laws can those rights be made real to the people whom government officials are chosen to serve.

I therefore hold and declare that the provisions of 42 U.S.C. § 2210(e) and any other provisions neces-

sary to implement the \$560,000,000 limitation of liability are unconstitutional and unenforceable insofar as they apply to nuclear incidents occurring inside the United States.

Counsel may tender any further order or judgment appropriate under the foregoing memorandum of decision.

This 31 day of March, 1977.

/s/ James B. McMillan
JAMES B. McMILLAN
United States District Judge

APPENDIX B

**IN THE DISTRICT COURT OF THE
UNITED STATES FOR THE
WESTERN DISTRICT OF NORTH CAROLINA**

Charlotte Division

C-C-73-139

[Filed Apr. 15, 1977]

**CAROLINA ENVIRONMENTAL STUDY GROUP, INC.,
ET AL., PLAINTIFFS**

—vs—

**UNITED STATES ATOMIC ENERGY COMMISSION, ET AL.,
DEFENDANTS**

JUDGMENT

This action was filed on June 22, 1973. As amended, it prays for a declaratory judgment that the limitation of liability portions of the Price-Anderson Act, 42 U.S.C. § 2210(e), as amended, are unconstitutional. An evidentiary hearing was conducted beginning September 27, 1976, on the issues of standing and ripeness, and the constitutional issues have been briefed by all parties.

On October 18, 1976, defendants filed a request that the constitutional issues be determined by a three-judge court. For the reasons stated in the memorandum of decision entered March 31, 1977, this request is denied.

Based upon the competent and material evidence at the hearing, the stipulations and admissions of record, and in accordance with the findings of fact and conclusions of law set out in the memorandum of decision dated March 31, 1977, the court hereby **DECLARES** and **ADJUDGES** that the provisions of 42 U.S.C. § 2210(e), and any other provision necessary to implement the \$560-million limitation of liability therein, are unconstitutional insofar as they apply to nuclear incidents occurring inside the United States.

Defendant Duke Power has moved for a stay of judgment and waiver of security. In accordance with Rule 62(d) of the Federal Rules of Civil Procedure, ruling on this motion will be deferred until such time as a notice of appeal may be filed.

Plaintiffs shall recover their costs, to be taxed by the Clerk.

This 14 day of April, 1977.

/s/ James B. McMillan
JAMES B. McMILLAN
United States District Judge

APPENDIX C

UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF NORTH CAROLINA
CHARLOTTE DIVISION

Civil Action No. C-C-73-139

[Filed May 13, 1977, U. S. District Court,
W. Dist. of N. C., Charlotte, N. C.]

CAROLINA ENVIRONMENTAL STUDY GROUP, INC.,
ET AL., PLAINTIFFS

vs.

UNITED STATES NUCLEAR REGULATORY COMMISSION,
ET AL., DEFENDANTS

NOTICE OF APPEAL TO THE SUPREME COURT
OF THE UNITED STATES OF AMERICA

Notice is hereby given that the United States Nuclear Regulatory Commission, a defendant in the captioned action, hereby appeals to the Supreme Court of the United States of America from the final judgment entered in this action on April 14, 1977.

The United States Nuclear Regulatory Commission takes this appeal pursuant to Title 28, United States Code, Section 1252.

KEITH S. SNYDER
United States Attorney

/s/ Kenneth G. Starling
KENNETH G. STARLING
Assistant United States
Attorney



No. 77-375

JAN 4 1978

MICHAEL RODAR, JR., CLERK

In the Supreme Court of the United States

OCTOBER TERM, 1977

**UNITED STATES NUCLEAR REGULATORY COMMISSION,
ET AL., APPELLANTS**

v.

CAROLINA ENVIRONMENTAL STUDY GROUP, INC., ET AL.

**ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR
THE WESTERN DISTRICT OF NORTH CAROLINA**

**BRIEF FOR THE UNITED STATES NUCLEAR REGULATORY
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In the Supreme Court of the United States

OCTOBER TERM, 1977

No. 77-375

**UNITED STATES NUCLEAR REGULATORY COMMISSION,
ET AL., APPELLANTS**

v.

**CAROLINA ENVIRONMENTAL STUDY GROUP, INC.,
ET -AL.**

**ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR
THE WESTERN DISTRICT OF NORTH CAROLINA**

**BRIEF FOR THE UNITED STATES NUCLEAR REGULATORY
COMMISSION**

OPINION BELOW

The opinion of the district court (J.S. App. A, pp. 1a-61a) is reported at 431 F. Supp. 203

JURISDICTION

The judgment of the district court declaring unconstitutional 42 U.S.C. (Supp. V) 2210(e) was entered on April 14, 1977 (J.S. App. B, pp. 62a-63a). A notice of appeal to this Court was filed on May 13, 1977 (J.S.

App. B, p. 64a). On July 6, 1977, the Chief Justice extended the time for docketing the appeal to and including September 10, 1977. The jurisdictional statement was filed on September 9, 1977, and on November 7, 1977, this Court noted probable jurisdiction and consolidated this case with the appeal from the same judgment by Duke Power Company in No. 77-262. Jurisdiction is conferred on this Court by 28 U.S.C. 1252. See *Weinberger v. Salfi*, 422 U.S. 749, 763 n. 8.

QUESTION PRESENTED

Whether the statutory limitation on liability arising from a single nuclear incident is constitutional.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

The Fifth Amendment to the Constitution provides in pertinent part:

No person shall be * * * deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

Section 170e of the Atomic Energy Act of 1954, as amended, 89 Stat. 1113, 42 U.S.C. (Supp. V) 2210(e), provides in pertinent part:

The aggregate liability for a single nuclear incident of persons indemnified, including the reasonable costs of investigating and settling claims and defending suits for damage, shall not exceed (1) the sum of \$500,000,000 together with the amount of financial protection required of the licensee or contractor or (2) if the amount of financial protection required of

the licensee exceeds \$60,000,000, such aggregate liability shall not exceed the sum of \$560,000,000 or the amount of financial protection required of the licensee, whichever amount is greater: *Provided*, That in the event of a nuclear incident involving damages in excess of that amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude * * *.

STATEMENT

Appellees brought this action in the United States District Court for the Western District of North Carolina, challenging an order of the Atomic Energy Commission¹ that granted Duke Power Company permission to build two nuclear power plants for the generation of electricity near Charlotte, North Carolina. The Commission moved to dismiss on the ground that review lay in the court of appeals under 28 U.S.C. 2342(4). The district court thereupon stayed further proceedings pending disposition of a suit for review filed by appellees in the United States Court of Appeals for the District of Columbia Circuit.

The court of appeals sustained the Commission's order. *Carolina Environmental Study Group v. United*

¹ Pursuant to the Energy Reorganization Act of 1974, 88 Stat. 1233, 42 U.S.C. (Supp. V) 5801 *et seq.*, the Nuclear Regulatory Commission has succeeded to the licensing and other related regulatory functions of the Atomic Energy Commission.

States, 510 F. 2d 796. Thereafter, the district court determined that it still had jurisdiction to decide whether 42 U.S.C. (Supp. V) 2210(e), which limits the aggregate liability for a single nuclear incident to \$560 million, is constitutional.

The district court first considered the threshold issues of standing and ripeness. The court found that the construction and operation of the power plants would have immediate adverse consequences for appellees, including exposure to a small amount of radiation, the heating of nearby recreational lakes, and the engendering of present fear of a future major nuclear accident at one of the plants; that the operation of the plants also would pose the risk of future adverse consequences, in the form of personal injury or property loss arising from a nuclear accident; and that Duke Power Company would not have undertaken the construction of the plants in the absence of the statutory limitation on liability. On the basis of these findings, the court concluded that appellees had standing to challenge the constitutionality of the statutory limitation and that the issue was ripe for adjudication.

On the merits, the district court held that the limitation on liability violates the due process and equal protection principles of the Fifth Amendment. With respect to due process, the court concluded that the limitation on liability deprives victims of nuclear accidents of any reasonable certainty of full compensation, without an adequate *quid pro quo*. With respect to

equal protection, the court reasoned that the statute irrationally places the risk of a major nuclear accident upon people who live near nuclear power plants, that it irrationally places a greater burden upon people injured by a nuclear accident than is placed upon people injured by other types of accidents, and that the limitation on liability serves no legitimate public purpose. Accordingly, the court declared unconstitutional 42 U.S.C. (Supp. V) 2210(e) "and any other provision necessary to implement the \$560-million limitation of liability therein" (J.S. App. B, p. 63a).

INTRODUCTION AND SUMMARY OF ARGUMENT

On this appeal, the Nuclear Regulatory Commission has presented only the question whether the statutory limitation on liability arising from a nuclear accident is constitutional. Duke Power Company, appellant in No. 77-262, additionally has presented the questions whether appellees have standing to raise the constitutional issue and whether that issue is ripe for adjudication.

The questions of standing and ripeness are not frivolous. There has never been a nuclear accident resulting even in substantial offsite damage, let alone an accident of the magnitude that would bring into play the statutory limitation on liability. Nor is there any reason to think that, if such an accident should occur in the future, appellees will be its victims.

The district court, however, determined that standing and ripeness could exist even though the statutory limitation on liability may never be applied to ap-

pellees or anyone else. The court reasoned that to the extent that the statutory limitation serves to facilitate the construction and operation of nuclear power plants, persons alleging that they will be injured by such construction and operation have standing to challenge the statute; as a corollary, the court reasoned that the ripeness of such a challenge must be measured by the imminence of the specific injury alleged. On its face, that reasoning appears correct.

With respect to the facts, the district court found, first, that Duke Power Company would not have undertaken construction of the two nuclear power plants that initially were at issue but for the statutory limitation on liability (J.S. App. A, pp. 30a-40a, 43a) and, second, that the operation of those plants will cause present and certain injury to appellees in the forms, *inter alia*, of increased radiation and thermal pollution (J.S. App. A, pp. 43a-44a). Although it may be questioned whether exposure to the thermal pollution and insubstantial amount of additional radiation that will be caused by the plants constitutes a legally cognizable injury, we do not here contend that the district court's findings are clearly erroneous. If those findings are accepted as correct, appellees' action would appear to satisfy the minimum standing and ripeness requirements of Article III. Cf. *Arlington Heights v. Metropolitan Housing Corp.*, 429 U.S. 252, 263-264.

Accordingly, we believe that this Court has power to decide the constitutional issue presented by the

Commission. Prudential considerations, moreover, strongly militate in favor of a decision on the merits. As we discuss further below (pp. 14-15, *infra*), a principal legislative purpose of the statutory limitation on liability was to remove the specter of ruinous tort liability, which stood as a major impediment to private participation in the development of nuclear energy. That purpose might be largely frustrated if this case were disposed of in a manner that failed to resolve the doubts, engendered by the decision below, concerning the scope of private liability in the event of a major nuclear accident. In these circumstances, the Court should exercise its constitutional power to decide this case on its merits.

The Price-Anderson Act requires the operators of large nuclear power plants to maintain the maximum amount of financial protection against public liability reasonably available from private sources, and in the event of a major nuclear accident to contribute a substantial deferred premium to create a secondary insurance pool. In addition, the Commission must indemnify the licensee and others who may be liable for injuries to the public in an amount exceeding the primary and secondary insurance. Total public liability is limited by the statute to \$560 million for a single incident, or the amount of primary and secondary insurance, whichever is greater.

This statutory scheme was developed to remove the significant impediment to private participation in

the development of peaceful uses of nuclear energy posed by the possibility of accidents resulting in enormous liability, and to assure the availability of substantial funds for the satisfaction of claims arising out of such accidents. It is a rational legislative means of removing a significant obstacle to the achievement of a valid federal policy.

Nothing in the Due Process Clause prevents Congress from imposing a limitation on liability as a part of such a rational legislative scheme. Nor is the congressional choice of the particular dollar amount of the liability limitation a denial of due process. Congress reasonably concluded, both in 1957 when the statute was enacted and in 1975 when it was most recently amended, that nuclear accidents causing injuries exceeding \$560 million were sufficiently unlikely that it was unnecessary as well as impractical to specify in advance how, if it were in the public interest to do so, compensation might be provided. Instead, in 1975 Congress enacted a promise to review any nuclear accident causing public injuries in excess of the current limitation on liability and to "take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude" (42 U.S.C. (Supp. V) 2210(e)).

Nor does due process prohibit the legislature from limiting, or even abolishing, common law causes of action without providing any *quid pro quo*. Laws

limiting liability are an accepted feature of our society. For example, the laws of every state permit individuals to limit their liability by incorporation, although persons who may be injured by the corporation's activities may thereby be deprived of compensation they might otherwise have received from the owners of the corporate enterprise. In any event, the Price-Anderson Act contains an ample *quid pro quo*, since it provides for the waiver of defenses and assures the availability of a very substantial sum for the payment of claims.

The limitation on liability does not effect a taking for public use of appellees' property without just compensation, in violation of the Fifth Amendment. A change in the law that affects no vested rights does not take "property." Moreover, the Act is a proper exercise of federal regulatory powers that does not directly encroach on the use of private property and thus involves no "taking."

ARGUMENT

THE STATUTORY LIMITATION ON LIABILITY IS CONSTITUTIONAL

Pursuant to the Price-Anderson Act, 42 U.S.C. (and Supp. V) 2210, each recipient of a license issued by the Nuclear Regulatory Commission (see note 1, *supra*) authorizing the construction or operation of a nuclear power plant with a rated capacity of

not less than 100,000 kilowatts electrical² must maintain specific forms of financial protection against liability claims arising out of a "nuclear incident."³ Each such licensee must maintain, as its primary insurance amount, "the maximum amount [of liability insurance] available at reasonable cost and on reasonable terms from private sources." 42 U.S.C. (Supp. V) 2210(b).⁴ The licensee also must participate in a secondary insurance pool into which each licensee is liable to pay a "deferred premium" of up to \$5 million for each of its nuclear facilities in the event of a major nuclear incident (the "secondary insurance amount").

² A typical commercial nuclear power plant would have a rated capacity of 1,000,000 kilowatts. United States Nuclear Regulatory Commission, *Reactor Safety Study, An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants* (WASH-1400), Executive Summary, p. 5 (October 1975), (hereinafter *Reactor Safety Study*).

³ The term "nuclear incident," which we use interchangeably with "nuclear accident," is defined as "any occurrence, including an extraordinary nuclear occurrence, * * * causing * * * bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or byproduct material * * *." 42 U.S.C. (Supp. V) 2014(q).

⁴ The Commission has determined that the primary insurance amount, which was \$60 million at the time the Price-Anderson Act was enacted in 1957, now is \$140 million. 42 Fed. Reg. 20139. See also "AEC Staff Study of the Price-Anderson Act," Selected Materials on Atomic Energy Indemnity and Insurance Legislation, Joint Committee on Atomic Energy, 93d Cong., 2d Sess. 5 (Committee Print, 1974).

Ibid. See also 42 Fed. Reg. 49.⁵ In addition, "[t]he Commission shall * * * agree to indemnify and hold harmless the licensee * * * from public liability arising from nuclear incidents which is in excess of the level of financial protection required of the licensee." 42 U.S.C. (Supp. V) 2210(c).⁶

The aggregate liability for a single nuclear incident of persons indemnified⁷ "shall not exceed the sum of \$560,000,000 or the amount of financial protection required of the licensee, whichever amount is greater

⁵ The Commission has authorized the operation of 63 large nuclear power plants, so that the secondary insurance amount at present is \$315 million. All of the power plants except the one most recently licensed are listed in "Operating Units—Status Report" NUREG 0020, November 1977, pp. 1-2 to 1-10.

⁶ Similar indemnification agreements are entered into by the Department of Energy with contractors engaged in activities involving a risk of a substantial nuclear incident. 42 U.S.C. (Supp. V) 2210(d).

⁷ The term "persons indemnified" includes, in addition to persons with whom an indemnity agreement is executed, "any other person who may be liable for public liability" as a result of a nuclear incident. 42 U.S.C. (Supp. V) 2014(t). Accordingly, the Commission's indemnification agreements, and the primary and secondary insurance, cover "any other person who may be liable." See 10 C.F.R. 140.91, Section II; 10 C.F.R. 140.92, Art. I, Para. 6. "For example, should offsite damage be caused by failure of a component, the public would have the benefit of the financial protection and related prompt compensation provisions of Price-Anderson, even though the vendor of the faulty part might otherwise be without substantial coverage." Hearings on H.R. 8631 before the Joint Committee on Atomic Energy, 94th Cong., 1st Sess. 67 (1975).

* * *." 42 U.S.C. (Supp. V) 2210(e).⁸ The statute further provides, however, "[t]hat in the event of a nuclear incident involving damages in excess of that amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude." *Ibid.*

In the event of a substantial nuclear incident, the Commission or any other interested party may request the federal district court in whose jurisdiction the incident occurred to determine whether the damages may exceed the limit of liability. 42 U.S.C. (and Supp. V) 2210(o). If the court determines that damages may exceed that amount, the court must approve a plan of distribution that includes provision for latent injury claims. *Ibid.* Prior to approval of a plan, however, distribution of amounts not in excess of 15 percent of the limit, i.e., at present \$84 million, may be made. *Ibid.* Pursuant to 42 U.S.C. (Supp. V) 2210 (m), the Commission has contracted with insurers for the investigation and prompt settlement of claims. See

⁸ Since the required level of financial protection now is \$455 million (see notes 4 and 5, *supra*), the current limit on liability is \$560 million; the amount of the government's indemnity therefore now is \$105 million. When the Price-Anderson Act was most recently amended, the Commission estimated that the required level of financial protection would reach \$560 million by 1930, at which time the government's obligation to indemnify would terminate. See S. Rep. No. 94-454, 94th Cong., 1st Sess. 36 (1975). The Commission further estimated that by 1985 the required level of financial protection would exceed \$1 billion. *Ibid.*

"AEC Staff Study of the Price-Anderson Act", *supra*, pp. 13-14; Brief Amici Curiae of Nuclear Energy Liability Property Insurance Association and Mutual Atomic Energy Liability Underwriters, pp. 4-7.

Furthermore, pursuant to 42 U.S.C. (Supp. V) 2210 (a) and (n), the Commission has required the insurance policies issued by private insurers and its own indemnity agreements to waive any defense as to the conduct of the claimant or fault of persons insured or indemnified, including negligence and contributory negligence, any defense of governmental or charitable immunity, and any defense based upon a statute of limitation in the case of actions brought within three years of the date by which the claimant should have known of his injury and not more than twenty years after the date of the nuclear incident. See 10 C.F.R. 140.81 to 140.85, 140.91 to 140.92.⁹

A. THE LIMITATION ON LIABILITY IS CONSISTENT WITH DUE
PROCESS AND EQUAL PROTECTION

1. The limitation on liability is neither arbitrary nor irrational

The district court held that the statutory limitation of aggregate liability arising from a single nuclear incident violates due process because under the statutory scheme there is no "reasonable certainty that the

⁹ The waiver of defenses applies only if the Commission determines that there has been an "extraordinary nuclear occurrence" involving substantial emission of radiation and substantial offsite injury to persons or property. 10 C.F.R. 140.81 to 140.85. This restriction was imposed out of concern that an unqualified waiver of defenses might encourage the bringing of nuisance suits. See H.R. Rep. No. 89-2043, 89th Cong., 2d Sess. 11 (1966).

victims will be justly compensated" (J. S. App. A, p. 50a). The question under the Due Process Clause, however, is not whether recovery is uncertain but, rather, whether the statutory scheme is arbitrary and irrational. "[L]egislative Acts adjusting the burdens and benefits of economic life come to the Court with a presumption of constitutionality, and * * * the burden is on one complaining of a due process violation to establish that the legislature has acted in an arbitrary and irrational way." *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 15. The statutory scheme challenged by appellees is neither arbitrary nor irrational, and it therefore meets the demands of due process.

Congress first authorized the private use of nuclear energy in the Atomic Energy Act of 1954, 68 Stat. 919, as amended, 42 U.S.C. 2011 *et seq.*, "in the hope and belief that the substantial entry of private industry into the atomic energy program would speed the further development of the peaceful uses of atomic energy, a major policy goal of the United States." H.R. Rep. No. 89-883, 89th Cong., 1st Sess. 4 (1965). See also 42 U.S.C. 2013(d). It soon became apparent, however, that private participation in the development of nuclear energy was severely inhibited by concern over the potentially enormous liability that might arise out of a nuclear accident. See "AEC Staff Study of the Price-Anderson Act," *supra*, pp. 1-2. Insurance was not available in amounts sufficient to cover such liability, and private corporations were reluctant or

unwilling to enter the field of nuclear energy if that would expose their shareholders to the risk of extraordinarily large, uncompensated losses. *Ibid.* See also J. S. App. A, pp. 30a-38a. See generally Green, *Nuclear Power: Risk, Liability, and Indemnity*, 71 Mich. L. Rev. 479, 483-484 (1973).

The Price-Anderson Act represents the congressional response to this problem. In the Act, Congress imposed a limitation on the liability that may arise out of a nuclear accident and provided a large governmental indemnity that further reduced private exposure to uncompensated loss. See 42 U.S.C. (Supp. V) 2210(e). Those provisions were intended to remove the significant impediment that uninsured potential liability posed to private participation in the development of nuclear energy, while at the same time ensuring the availability of substantial funds for the satisfaction of valid claims arising out of a nuclear accident.

Although appellees may disagree with it, the encouragement of the "entry of private industry into the atomic energy program" unquestionably represents constitutionally permissible legislative policy. In light of the substantial evidence of private reluctance to accept the risk of virtually unlimited liability for nuclear accidents, the imposition of a statutory limitation on liability plainly was a rational legislative means of providing such encouragement. The statutory limitation was tailored to meet the specific problem with which Congress was faced, and the subse-

quent history of private nuclear development appears to illustrate that the limitation significantly assisted in the effectuation of the legislative policy. Indeed, appellees' underlying complaint seems to be not that the limitation on liability is not rationally related to a legislative purpose, but rather that, from their point of view, it has served that purpose only too well.

Thus there can be no doubt that Congress had power consistent with the Due Process Clause to impose some limitation on liability arising out of nuclear accidents as a means of facilitating private development of nuclear energy. At bottom, therefore, appellees' argument that the limitation is irrational reduces to a disagreement with Congress over the choice of a particular dollar amount. But surely Congress must be allowed very substantial leeway in specifying the dollar amount of a limitation. Specification of a fixed dollar amount is based upon legislative fact-finding and should not be subject to judicial second-guessing unless the congressional choice can be shown to be utterly arbitrary and frivolous. See, e.g., *United States v. Carolene Products Co.*, 304 U.S. 144, 153-154; *Ferguson v. Skrupa*, 372 U.S. 726, 729. Appellees have made no such showing here.

In fixing a limit on the aggregate liability arising out of a nuclear accident, Congress acted on the basis of evidence that a fund of \$560 million would be sufficient to provide full compensation in all reasonably conceivable circumstances. See Hearings on Govern-

mental Indemnity before the Joint Committee on Atomic Energy, 84th Cong., 2d Sess. 122-123 (1956).¹⁰ Given the apparently extremely remote possibility of the occurrence of an accident in which the damages would exceed \$500 million, Congress decided that, as a practical matter, it was unnecessary to make prior provision for such an accident. Instead, it concluded that it was best to decide after the fact how to deal with consequences of such accidents, if any occurred. S. Rep. No. 296, 85th Cong., 1st Sess. 21 (1957).

When Congress re-examined the liability limitation several years later, it reaffirmed its earlier judgment (H.R. Rep. No. 89-883, 89th Cong., 1st Sess. 6-7 (1965)):

[T]his limitation does not, as a practical matter, detract from the public protection afforded by this legislation. In the first place, the likelihood of an accident occurring which would result in claims exceeding the sum of the financial protection required and the governmental indemnity is exceedingly remote, albeit theoretically possible. Perhaps more important, in the event of a national disaster of this magnitude, it is obvious that Congress would have to review the problem and take appropriate

¹⁰ On March 22, 1957, the Atomic Energy Commission transmitted to the Joint Committee on Atomic Energy a report estimating the possible consequences of a major accident at a large nuclear power reactor. The transmittal letter from the Acting Chairman of the Commission stated that "[i]n the large majority of theoretical reactor accidents considered, the total assumed losses would not exceed a few hundred million dollars." Selected Materials on Atomic Energy Indemnity and Insurance Legislation, *supra*, p. 559.

action. The history of other natural or man-made disasters, such as the Texas City incident, bears this out. The limitation of liability serves primarily as a device for facilitating further congressional review of such a situation, rather than an ultimate bar to further relief of the public.

Congress reviewed the matter again in 1974 and 1975 in order to determine whether the original limitation on liability continued to permit reasonable assurance of full recovery. At that time, Congress enacted the provision for secondary insurance, one consequence of which is that as additional nuclear power plants become operational, the limitation on liability eventually will rise. See 42 U.S.C. (Supp. V) 2210 (b) and (e). But Congress determined that no immediate change in the \$560 million limit was appropriate, especially in light of evidence that "the probabilities of a nuclear incident are much lower and the likely consequences much less severe than has been thought previously." S. Rep. No. 94-454, 94th Cong., 1st Sess. 12 (1975). This determination was based in part on a three-year study conducted for the Commission by Dr. Norman C. Rasmussen of the Massachusetts Institute of Technology, which concluded that "nuclear power plants have achieved a relatively low level of risk compared to many other activities in which our society engages." Main Report, p. 131, *Reactor Safety Study, supra*.¹¹ On the basis of this study Dr.

¹¹ The study estimated the likelihood of a nuclear incident causing as much as \$560 million in property damages to be no more

Rasmussen testified: "I believe that the current \$560 million limit is a reasonable value at this time and will cover all combinations of circumstances which can reasonably be considered credible." Hearings on Possible Modification or Extension of the Price-Anderson Insurance and Indemnity Act before the Joint Committee on Atomic Energy, 93d Cong., 2d Sess. 643 (1974). Congress therefore had a rational basis for determining a limitation of \$560 million would not prevent payment of adequate compensation for injuries to the public arising from any reasonably likely nuclear accident.

Moreover, in amending the Act in 1975 Congress enacted a promise to review any nuclear accident that caused injuries in excess of the statutory limit and to "take whatever action is deemed necessary and appropriate to protect the public from consequences of a disaster of such magnitude" (42 U.S.C. (Supp. V) 2210(e)),¹² thereby codifying its longstanding position that the limitation on liability was not intended as a complete bar to further relief. Congress reasonably determined that nuclear accidents causing injuries exceeding \$560 million were sufficiently un-

than one per 500,000 reactor years of operation (App. 56). The report summarized, "[t]he possible consequences of potential reactor accidents are predicted to be no larger, and in many cases much smaller, than those of non-nuclear accidents." Executive Summary, p. 1, in *Reactor Safety Study*, *supra*.

¹² The most recent precedent for congressional action to aid disaster victims is Pub. L. 94-400, 90 Stat. 1211, in which Congress provided for the victims of the Teton Dam disaster.

likely that it was unnecessary as well as impractical to attempt to specify in advance how, if it were in the public interest to do so, compensation might be provided.

In short, the statutory scheme challenged by appellees represents the legislative accommodation of two competing interests—the public interest in expeditious development of nuclear energy for peaceful uses, and the private interest in protection against or compensation for injury suffered as a result of such development. Since that accommodation is not arbitrary and irrational, it should be sustained.

2. *The limitation on liability is an integral part of a valid scheme of legislative compensation*

a. Due process does not require that an injured party recover under a legislative compensation scheme as much as he might have recovered at common law. *New York Central R.R. Co. v. White*, 243 U.S. 188. A person has no vested interest in any rule of the common law. *Second Employers' Liability Cases*, 223 U.S. 1. Thus "legislation readjusting rights and burdens is not unlawful solely because it upsets otherwise settled expectations." *Usery v. Turner Elkhorn Mining Co.*, *supra*, 428 U.S. at 16.

Common law rights may be abolished without the substitution of statutory rights as a *quid pro quo*. In *Silver v. Silver*, 280 U.S. 117, for example, this Court held that the Fourteenth Amendment was not violated by the Connecticut Guest Statute, under which an individual carried gratuitously in an auto-

mobile was barred from recovery for injuries caused by the negligent operation of the vehicle. In so holding, the Court specifically stated that "the Constitution does not forbid the creation of new rights, or the abolition of old ones recognized by the common law, to attain a permissible legislative object." 280 U.S. at 122. Similarly, in *Arizona Employers' Liability Cases*, 250 U.S. 400, this Court sustained an Arizona law that imposed strict liability upon companies engaged in hazardous activities, against a challenge that it denied due process by depriving the employer of common law defenses to future liability without giving him anything in return. See also *Carr v. United States*, 422 F. 2d 1007 (C.A. 4); *Keller v. Dravo Corp.*, 441 F. 2d 1239 (C.A. 5); *Thomason v. Sanchez*, 539 F. 2d 955 (C.A. 3), certiorari denied, 429 U.S. 1072; *Murray v. New York Central R. R. Co.*, 287 F. 2d 152 (CA. 2), certiorari denied *sub nom. Continental Grain Co. v. City of Buffalo*, 366 U.S. 945.

In particular, laws limiting liability without providing alternative compensation have long been a recognized and accepted feature of our legal system. The Act limiting the liability of shipowners dates from 1851 (9 Stat. 635; 46 U.S.C. 183), and has been judicially approved and enforced. See, *e.g.*, *Providence & N.Y.S.S. Co. v. Hill Mfg. Co.*, 109 U.S. 578; *Murray v. New York Central R.R. Co.*, *supra*; *Petition of Kinsman Transit Co.*, 338 F. 2d 708 (C.A. 2), certiorari denied, 380 U.S. 944. The Warsaw Convention on International Air Transportation, 49 Stat. 3000, 11 T.S. No. 876, 137 L.N.T.S., which limits

recovery for injuries suffered during international air travel, also has met with judicial approval. *Indemnity Ins. Co. of North America v. Pan American Airways*, 58 F. Supp. 338 (S.D. N.Y.). See also *Schloss v. Matteucci*, 260 F. 2d 16 (C.A. 10). But the most compelling and persuasive example of limited liability is furnished by the laws of every state permitting joint venturers, and even individual proprietors, to limit the liability arising out of their business ventures through the simple device of incorporation. Indeed, the corporation, which is an important and integral feature of this nation's economic system, would not exist if government lacked the power to limit liability as a means of facilitating the undertaking of commercial activities that pose a risk of loss to others. The universal existence of the corporation as a legal entity with limited liability, notwithstanding the fact that persons injured by a corporation's activities may be deprived of the compensation they otherwise could collect from its individual owners, is at odds with appellees' claim that the Constitution forbids the imposition of a limitation on liability in the public interest.¹³

¹³ Appellees incorrectly suggest (Response, p. 17) that in *New York Central R. R. Co. v. White*, 243 U.S. 188, and *Crowell v. Benson*, 285 U.S. 22, this Court found the statutes involved were constitutional "because the statutes gave victims a '*quid pro quo*' to compensate for the limitation on liability". In *White*, the Court found it unnecessary to decide whether a state might "suddenly set aside all common law rules respecting liability as between employer and employee, without providing a reasonably just substi-

b. In fact, however, the Price-Anderson Act does contain a *quid pro quo* in the form of a reasonable scheme of compensation for persons injured by nuclear accidents. Under the Act and the implementing regulations, licensees are made liable without fault for any damage. 42 U.S.C. (Supp. V) 2210(a); 10 C.F.R. 140.91 to 140.95. Although the district court believed that strict liability would govern common law claims arising from a nuclear incident (J.S. App. A, pp. 52a-54a), the legislative history of the Price-Anderson Act indicates that there was substantial uncertainty whether strict liability would be applied in all states and that the provision for liability without fault was included to ensure that victims would be compensated even where accidents were not caused by willful or negligent acts or omissions. H.R. Rep. No. 89-2043, 89th Cong., 2d Sess. 6-8 (1966). Moreover, even where strict liability would be applied, it may be subject to exceptions. For example, injury resulting from acts of God, such as earthquakes, or acts of third parties, such as sabotage, may not give rise to strict liability even if the operation of a hazardous

tute". 243 U.S. at 201. In *Crowell*, the Court noted only that Congress could provide payments "which would reasonably approximate the probable damages" (285 U.S. at 41); it did not suggest that it was constitutionally compelled to do so. The state courts correctly have decided that no *quid pro quo* is constitutionally required. See, e.g., *Montgomery v. Daniels*, 38 N.Y. 2d 41 (N.Y. Ct. of App.); *Jones v. State Board of Medicine*, 97 Idaho 859, 555, P. 2d 399, 400.

activity was an intervening cause. See Prosser, *Torts* 520-522 (4th ed. 1971). Under the Act, however, licensees will be liable for injuries caused by nuclear incidents resulting from occurrences such as earthquakes and sabotage.

Perhaps the major benefit afforded potential claimants by the Act, however, is the assurance that at least \$560 million will be available for the payment of claims resulting from a major nuclear accident. Since the maximum amount of liability insurance currently available from private insurers is \$140 million (see note 4, *supra*), the Act in effect ensures the availability of an additional \$420 million for the payment of claims. Few defendants held liable at common law for damages caused by a major nuclear incident would be able to pay judgments in excess of that amount. See S. Rep. No. 296, *supra*, p. 15. There was testimony in this case, for example, that if a nuclear accident causing injuries in excess of \$560 million occurred at one of the plants operated by Duke Power Company, which is the nation's tenth largest utility, that company would not be able to pay damage claims exceeding \$200 million and still meet its other obligations (Tr. 474, 477, App. 393-394, 395).¹⁴ The Act thus provides an important assurance to potential claimants that a large fund will be available to pay claims; without it, the right to sue for damages could be largely

¹⁴ In the event of such an accident, the damage to the company's plant would be enormous, causing the company itself losses in excess of \$1 billion (Tr. 436-437, App. 370-371).

illusory.¹⁵ Congress was aware of this and other related considerations when it chose not to permit the Price-Anderson Act simply to expire (Hearings on H.R. 8631, *supra*, at 69 (testimony of Chairman Anders)):

The primary defect of this alternative, however, is its failure to afford the public either a secure source of funds or a firm basis for legal liability with respect to new plants. While in theory no legal limit would be placed on liability, as a practical matter the public would be less assured of obtaining compensation than under

¹⁵ Appellees argue that the availability of at least \$560 million for the payment of claims does not constitute a *quid pro quo* because without the limitation on liability there would be no threat of a nuclear accident because no nuclear power plants would be in operation (Response, p. 20). It is certainly true that the limitation on liability eliminated a substantial obstacle to the construction and operation of nuclear power plants (see pp. 14-15, *supra*). But this is not to say that no such facilities would have been constructed in the absence of a limitation on liability. To the contrary, there is a reasonable likelihood that some nuclear power plants would have been constructed anyway (see, *e.g.*, Br. in Opp. to Mot. to Affirm in No. 77-262, at 5), and appellees' assertion to the contrary is speculation.

Appellees' argument, however, does serve to emphasize the analogy between the statute challenged here and state laws providing limited liability for corporations (see p. 22, *supra*). There may well be many risky or hazardous commercial activities that private investors would refuse to undertake without the protection afforded by corporate limited liability. But this fact does not render unconstitutional those state laws that confer limited liability upon corporations without furnishing a *quid pro quo* to persons who as a result may suffer uncompensated injury arising out of a corporation's activities.

Price-Anderson. Establishing liability would depend in each case on state tort law and procedures, and these might or might not provide for no-fault liability, let alone the multiple other protections now embodied in Price-Anderson. The present assurance of prompt and equitable compensation under a pre-structured and nationally applicable protective system would give way to uncertainties, variations and potentially lengthy delays in recovery. It should be emphasized, moreover, that it is collecting a judgment, not filing a lawsuit, that counts. Even if defenses are waived under state law, a defendant with theoretically "unlimited" liability may be unable to pay a judgment once obtained. When the defendant's assets are exhausted by earlier judgments, subsequent claimants would be left with uncollectable awards. The prospect of inequitable distribution would produce a race to the courthouse door in contrast to the present system of assured orderly and equitable compensation. Moreover, to the extent that "uncovered" liability—liability not covered by equitable cost allocation of the Price-Anderson nature—must be absorbed by an individual utility, the result can impact on its consumers through impaired service or added economic burdens.¹⁶

The Act thus substitutes a reasonable statutory compensation scheme for pre-existing tort remedies. This

¹⁶ The Act further provides coverage for injuries caused by persons such as suppliers and other third parties, who might otherwise lack substantial insurance coverage, and it in effect substitutes a generous statute of limitations for the state statutes that otherwise would govern. See note 7 and p. 13, *supra*.

Court has consistently upheld, as consistent with due process, workmen's compensation statutes that similarly replace traditional tort remedies with alternative compensation plans. *Crowell v. Benson*, *supra*; *New York Central R.R. Co. v. White*, *supra*. Like the comparable provisions of workmen's compensation statutes, the Price Anderson Act's limitation on liability comports with the requirements of due process.¹⁷

¹⁷ The district court's statement that "[t]he Act tends to encourage irresponsibility in matters of safety and environmental protection" (J.S. App. 51a) is simply wrong. Licensees must strictly comply with the Commission's detailed safety regulations, which provide for a large margin of safety. "Issues of Financial Protection in Nuclear Activities," in *Selected Materials on Atomic Energy Indemnity and Insurance Legislation*, *supra*, pp. 61, 123; H.R. Rep. No. 93-1115, 93d Cong., 2d Sess. 13-14 (1974). Second, if a nuclear accident serious enough to cause substantial offsite damage ever should occur, it would also cause damage to the licensee's facility greatly in excess of any property insurance. Thus a principal loser in any nuclear incident will be the operator of the affected power plant; a major nuclear incident would destroy the plant or render it inoperable, with resultant loss both of asset value and operating revenues. The limitation on liability cannot significantly diminish the licensee's incentive to avoid a major nuclear incident. See Brief as Amici Curiae of Nuclear Energy Liability Property Insurance Association and Mutual Atomic Energy Liability Underwriters, pp. 8-11.

Similarly insubstantial is appellees' suggestion that the limitation on liability impermissibly interferes with state tort laws (Response, p. 26). Appellees refer to *National League of Cities v. Usery*, 426 U.S. 833, but in that case this Court made explicit that it was placing no restriction on "the authority of Congress to enact laws regulating individual businesses necessarily subject to the dual sovereignty of the government of the Nation and of the state in which they reside" (426 U.S. at 845).

3. *The limitation on liability does not deny equal protection*

The district court held that the statutory limitation on liability contravenes the principle of equal protection inherent in the Due Process Clause. At bottom, however, the district court's discussion of equal protection is little more than a reiteration of the basis for its holding with respect to due process, and appellees correctly have concluded that "the equal protection guarantee does not in this context add to other due process clause guarantees" (Response, p. 16, n. 12). Since it appears that appellees have abandoned equal protection as an independent ground for attacking the statute, we discuss that issue only briefly here.

The principal basis for the district court's holding with respect to equal protection appears to be its view that "[t]he Act irrationally and unreasonably places a greater burden upon people damaged by nuclear accident than upon people damaged by other types of accidents * * * involving power companies" (J. S. App. A, p. 57a).¹⁸ But as we already have indicated (pp. 13-20, *supra*), Congress' decision to limit liability for nuclear accidents was not irrational or unreasonable: a major purpose of the Price Anderson

¹⁸ The court also believed that "[t]he statute irrationally places the risk of major nuclear accident upon people who happen to live in the areas which may be touched by radioactive debris" (J.S. App. A, p. 57a). But the fact that those living near a nuclear power plant may be more likely to suffer injury in case of a nuclear accident at the plant in no way bears upon the rationality of Congress' decision to limit the aggregate liability arising from such an accident.

Act was to encourage private participation in the development of nuclear energy, and the limitation on liability is rationally related to that purpose. Thus, the difference in treatment accorded under the Act to persons injured in major nuclear accidents and the treatment accorded at common law to people damaged by other types of accidents is "reasonable, not arbitrary, and * * * rest[s] upon [a] ground of difference having a fair and substantial relation to the *Royster Guano Co. v. Virginia*, 253 U.S. 412, 415. See also *Dandridge v. Williams*, 397 U.S. 471, 487; *Richardson v. Belcher*, 404 U.S. 78, 81."¹⁹ Accordingly, the statute satisfies the requirements of equal protection.²⁰

object of the
legislation

The district court nevertheless declared the statute unconstitutional because the court envisioned other methods, which it regarded as preferable, for providing recovery for injuries caused by nuclear accidents

¹⁹ Moreover, as we also have shown above (pp. 23-27, *supra*), the statutory compensation scheme affords victims of nuclear accidents a *quid pro quo* in the forms of a guarantee of a large fund for payments of damages and of waiver of common law and some statutory defenses. As a consequence, such victims may recover more than similarly injured victims of nonnuclear accidents, who must rely upon common law tort remedies against private tortfeasors whose resources may be more limited.

²⁰ The district court incorrectly believed that "[t]he Act * * * relieves the owners of power plants of financial responsibility for nuclear accidents" (J.S. App. A, p. 57a). The Act requires owners to maintain the maximum amount of liability insurance available and binds them to a \$5 million deferred premium for each facility, while doing nothing to relieve them of the risk of very substantial losses to their own property. See pp. 9-13 and note 17, *supra*.

(J.S. App. A, pp. 57a-58a). But the choice of method is for Congress, not for the courts. "It is not a function of the courts to speculate as to whether * * * the evils sought to be remedied could better have been regulated in some other manner." *Mourning v. Family Publications Service, Inc.*, 411 U.S. 356, 378. See also *Mathews v. Diaz*, 426 U.S. 67, 84. The fact that Congress might have provided differently does not render an otherwise rational decision irrational.

B. THE ACT DOES NOT EFFECT A TAKING WITHOUT JUST
COMPENSATION

Appellees contend that the Price Anderson Act takes their property "for public use, without just compensation", in violation of the Fifth Amendment (Response, pp. 22-26). This contention, like the other arguments appellees make, rests upon the assumption that their likelihood of full recovery, in the case of a accident, is less under the Act than at common law. But as we have explained (pp. 24-27, *supra*), the likelihood of full recovery in fact may be greater under the Act. Moreover, the statutory limitation on liability does not necessarily place an irremovable cap on recovery. The Act simply distinguishes between accidents causing damages of less than \$560 million²¹ and those giving rise to greater damages; it provides fully for the former category of accidents, while reserving for later consideration the amount of additional compensation that may be appropriate in the

²¹ As we note above (pp. 11-12), that figure will increase as more nuclear power plants begin operation.

latter. Thus, it cannot be said that the Act will operate to diminish the recovery of any injured person.²²

But even if the Act does operate to diminish the recovery of persons injured as the result of a future nuclear incident, nevertheless the Act does not effect a "taking" of "property." A change in the law that affects no vested right does not take "property." "It should be clear that the threshold requirement of an interest which is 'eligible' * * * to have the opportunity of becoming protectible property [under the Just Compensation Clause] is that the economic interest has come into being as an interest recognizable at law." Sax, *Takings and the Police Power*, 74 Yale L.J. 36, 61 n. 134 (1964). Cf. *Silver v. Silver*, *supra*. Since no person had a vested right of recovery that was infringed by enactment of the Price-Anderson Act (cf. *Second Employers' Liability Cases*, *supra*), the Act did not take anyone's "property."

Moreover, the Act is a regulatory measure, which serves the public interest by inducing private participation in the development of nuclear energy and by providing a substantial fund for payment to persons who may be injured in nuclear accidents. Such a measure does not effect a "taking."²³ "[A]cts done in the proper exercise of governmental powers, and not directly encroaching upon private property,

²² The Act is in sharp contrast to the statutes at issue in the cases upon which appellees rely, in which direct limitations were placed upon the use of private property. In particular, *Pennsyl-*

though their consequences may impair its use, are universally held not to be a taking within the meaning of the constitutional provision." *Transportation Co. v. Chicago*, 99 U.S. 635, 642, See also *Knox v. Lee*, 12 Wall. 457, 551.

In particular, a statutory limitation on liability, enacted for legitimate regulatory purposes, does not effect a taking. That much would appear to be implicit in this Court's decisions sustaining statutory compensation schemes in such cases as *New York*

vania Coal Co. v. Mahon, 260 U.S. 393, concerned the validity of a Pennsylvania statute that prohibited the mining of certain deposits of coal. Similarly, in *Louisville Joint Stock Land Bank v. Radford*, 295 U.S. 555, a bank had been prohibited from gaining possession of mortgaged property through foreclosure after default. The Price Anderson Act places no similar restriction on appellees' use or enjoyment of property. Cf. *United States v. Causby*, 328 U.S. 256, 261-262.

²³ This Court has recently suggested with reference to a direct regulation of the use of private property that regulatory measures may be so onerous or unreasonable that they effect a taking of property. *Goldblatt v. Town of Hempstead*, 369 U.S. 590, 594. But without the element of directness, an element missing here, the burden of regulation, however onerous, could not constitute a taking, for "it is the character of the invasion, not the amount of damages resulting from it * * * that determines the question whether it is a taking." *United States v. Causby*, *supra*, 328 U.S. at 266. In any event, we already have established that the statutory limitation on liability at issue here is neither arbitrary nor irrational (see pp. 13-20, *supra*).

Central R.R. Co. v. White, supra, and *Crowell v. Benson, supra*. It was never suggested in those cases that an employee who recovered less from his employees for a job-related injury than he might have received at common law would have a valid claim against the government for a taking of property. Yet that is essentially appellees' argument here.²⁴ That argument ignores a long line of decisions holding that even regulatory measures more directly placing restrictions on the use or enjoyment of property do not effect a Fifth Amendment taking. See, e.g., *Goldblatt v. Town of Hempstead, supra*; *United States v. Central Eureka Mining Co.*, 357 U.S. 155; *Bowles v. Willingham*, 321 U.S. 503. Those cases amply establish that a measure such as that at issue here does not constitute a taking of property.²⁵

²⁴ The implications of appellees' argument that a governmental grant of limited liability effects a taking are broad indeed. It suggests, for example, that persons who are denied full compensation for injuries as a consequence of corporate limited liability may recover the amount of the deficiency from the state.

²⁵ In any event, a taking violates the Constitution only if it is not accompanied by just compensation. Appellees have not explained why, if, contrary to our submission, the Act may effect takings in the future by limiting recovery, they will be deprived of just compensation. Cf. *Regional Rail Reorganization Act Cases*, 419 U.S. 102. Thus, even if the Act effected a taking, it would not for that reason be unconstitutional.

CONCLUSION

The judgment of the district court should be reversed.

Respectfully submitted.

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ET AL., APPELLANTS**

v.

CAROLINA ENVIRONMENTAL STUDY GROUP, INC., ET AL.

**ON APPEAL FROM THE UNITED STATES DISTRICT
COURT FOR THE WESTERN DISTRICT OF
NORTH CAROLINA**

**REPLY BRIEF FOR THE UNITED STATES NUCLEAR
REGULATORY COMMISSION**

**WADE H. MCCREE, JR.,
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1. Appellees assert (Br. 33-40) that this Court should evaluate the constitutionality of the Price-Anderson Act's limitation of liability under a standard more exacting than the rational basis test traditionally used for evaluating statutes "adjusting the burdens and benefits of economic life." *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 15. A higher standard of review is necessary, according to appellees, because of the serious consequences of a major nuclear accident. Drawing an analogy to *Skinner v. Oklahoma*, 316 U.S. 535, in which this Court applied a strict standard of review to a compulsory sterilization statute, appellees state that "the power to build nuclear plants may produce equally devastating effects" (Br. 34) and contend that at least an intermediate standard of review therefore is appropriate.

But the question before this Court is not the constitutionality of Congress' decision to encourage the construction of nuclear power plants. Indeed, appellees emphasize repeatedly that their only objection is to the compensation provisions of the Price-Anderson Act, not to the nuclear power program itself (Br. 9, 31, 59). Thus this case involves, like *Usery* and the other cases cited in our opening brief at pages 14, 16 and 29-30, simply the question of the rationality of a statutory allocation of economic benefits and burdens. It involves only money: who is entitled to how much and when.¹ There is accordingly no reason for this Court to require more than a rational basis to uphold the legislative judgment.²

2. Appellees have clarified their argument that their property has been "taken for public use" in violation of the Just Compensation Clause by explaining that this argument "relates solely" to their rights in real and

¹If appellees' position were correct, the rational basis standard would be abolished. The reasoning would run: every decision involving money could have important consequences; a decision to deny disability or welfare benefits could lead to starvation or discomfort; surely the government may not impose death or discomfort without a strong showing of necessity (see *Gregg v. Georgia*, 428 U.S. 153); therefore any denial of money to potentially needy persons must be justified by more than a mere rational basis. The Court has rejected this argument. Decisions to pay or not to pay money, even to the most needy persons, are assessed under the rational basis test. *Califano v. Jobst*, No. 76-860, decided November 8, 1977; *Weinberger v. Salfi*, 422 U.S. 749. Cf. *Maher v. Roe*, 432 U.S. 464 (decision not to pay for abortions supported by rational basis, even though the state could not interfere in the abortion decision without a compelling justification).

²Even if an intermediate test is appropriate, we submit that, for the reasons explained in our opening brief (pages 14-20), the Price-Anderson Act does "serve important governmental objectives and [is] * * * substantially related to achievement of those objectives" (*Craig v. Boren*, 429 U.S. 190, 197).

personal property that would be affected by a major nuclear accident (Br. 61 and n. 52). But the Price-Anderson Act's limitation of liability effects no "taking" for Fifth Amendment purposes of any such right. It does not itself deprive anyone of any interest in any real or personal property; it does not assert any dominion over any such property, or even limit its possible uses or decrease its value in any way. Cf. *United States v. Kansas City Insurance Co.*, 339 U.S. 799, 809-812; *United States v. Causby*, 328 U.S. 256, 261-267; *Richards v. Washington Terminal Co.*, 233 U.S. 546, 553-558.

Indeed, petitioners apparently do not contend that either the enactment of the limitation of liability, or even the construction of the nuclear power plants that may be influenced by that enactment, has taken their property without just compensation.³ They maintain simply that "the complete destruction of appellees' property by a nuclear accident, occurring at one of Duke's plants, *would be* a 'taking' by the United States, as that term is defined in the Fifth Amendment" (Br. 62; emphasis added). But that contention does not pertain to the constitutionality of the Act itself; it is no more than an assertion that, if there were a major nuclear accident that destroyed appellees' property, they would be entitled to "just compensation" despite the limitation on liability. This Court need not decide that abstract and speculative question at this time.⁴

³The record demonstrates that the construction of the Duke nuclear power plants at issue here has had no adverse effects on local property values (App. 175; J.S. App. 16a; Duke Br. 12a).

⁴As this Court has observed, "[t]raditionally, we have treated the issue as to whether a particular governmental restriction amounted to a constitutional taking as being a question properly turning upon the particular circumstances of each case." *United States v. Central Eureka Mining Co.*, 357 U.S. 155, 168. Those circumstances include the nature of the particular injury suffered, the amount of

Even if it were possible to conceive of particular applications of the limitation of liability provisions that would be inconsistent with the Just Compensation Clause, that does not mean that these provisions are unconstitutional on their face, because, as we explained in our opening brief, their primary effect is to assure, rather than deny, just compensation.

3. Appellees adopt (Br. 35-36 and n. 34) the argument of several states and agencies that the Price-Anderson Act infringes on state sovereignty. But *National League of Cities v. Usery*, 426 U.S. 833, on which appellees and amici principally rely, offers them no support. As this Court repeatedly emphasized, *National League* involved legislation directed against the states as states and impinging directly on governmental functions essential to the states' independent existence. The Court cast no doubt on statutes that directly affect private parties and touch only indirectly on the states. The Price-Anderson Act affects the states only by placing them on the same footing as other parties that may be injured by an

compensation available, and whether the particular incident constituted a "taking for public use." Thus, although we believe that the Fifth Amendment claims passed on by the district court are ripe for review, we do not believe it appropriate for this Court to consider here whether some possible injury from a conceivable nuclear disaster might, in the absence of an adequate federal response, deprive someone, possibly one of appellees, of some property. See *Regional Rail Reorganization Act Cases*, 419 U.S. 102, 143-148 (a "taking" claim is not ripe until the operation of the taking against identified persons is no longer hypothetical or speculative). We doubt, moreover, that a nuclear accident would be a taking by the United States within the meaning of the Fifth Amendment. Cf. *Jackson v. Metropolitan Edison Co.*, 419 U.S. 345 (activities of regulated utility are not state action). There is no need, however, to pursue that matter here.

accident; many statutes treat states and private parties identically in permitting recoveries for injuries. See, e.g., *Illinois Brick Co. v. Illinois*, 431 U.S. 720 (antitrust laws). Moreover, preemption of state law is a necessary consequence of the Supremacy Clause; it would be untenable to argue that the displacement of state preferences compelled by the Supremacy Clause violates some right of the states.⁵ See, e.g., *Ray v. Atlantic Richfield Co.*, No. 76-930, decided March 6, 1978 (state tanker regulation law preempted even though preemption displaces important state policies).

For these reasons, as well as those discussed in our opening brief, the judgment of the district court should be reversed.

Respectfully submitted.

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Solicitor General.

MARCH 1978.

⁵When Minnesota contended that federal regulation of atomic energy unconstitutionally infringed its power to protect the health, safety and welfare of its residents, this Court summarily rejected the argument. *Northern States Power Co. v. State of Minnesota*, 447 F. 2d 1143 (C.A. 8), summarily affirmed, 405 U.S. 1035.